D'YAKONOV, F.V.

Valuable contribution to the study of the economic aspects of agriculture in Yakutia ("Materials on the economics of agriculture of Yakutia." Reviewed by F.V. D'iakonov). Izv. Sib. otd. AN SSSR no.4:145-148 '58. (MIRA 11:9)

1. Institut kompleksnykh transportnykh problem AN SSSR.
(Yakutia--Agriculture--Economic aspects)

D'YAKONOV, F.V.

Geography problems related to main-line transportation in the northeastern U.S.S.R. Trudy Vost.- Sib. fil. AN SSSR no.32:116-124 '60. (MIRA 14:4)
(Siberia, Eastern--Transportation)

D'YAKONOV, F.V.

Yakutia. Geog. v shkole 25 no.1:19-25 Ja-F '62. (MIRA 15:1)
(Yakutia--Economic geography)

D'YAKONOV, F.V.

Productive forces and the production-territorial complexes of the northeastern part of the U.S.S.R. Izv. AN SSSR. Ser. geog. no.4; 35-46 Jl-Ag '63. (MIRA 16:8)

1. Institut geografii AN SSSR.
(Russia, Northern—Industries, Location of)

KORZHUYEV, S.S.; VITVITSKIY, G.N.; YEGOROV, O.V.; NAUMOV, S.N.; ZOL'NIKOV, V.G.; KARAVAYEV, M.N.; KACHURIN, S.P.; KOSMACHEV, K.P.; Prinimali uchastiye: KORONKEVICH, N.I.; D'YAKONOV, F.V.; GERASIMOV, I.P., akademik, red.; PREOBRAZHENSKIY, V.S., red.; RIKHTER, G.D., red.; ABRAMOV, L.S. red.; ARMAND, D.L., red.; GELLER, S.Yu., red.; ZONN, S.V., red.; DZERDZEYEVSKIY, B.L., red.; KOMAR, I.V., red.; LAVRENKO, Ye.M., red.; LEONT'YEV, N.F., red.; LETUNOV, P.A., red.; L'VOVICH, M.I., red.; MESHCHERYAKOV, Yu.A., red.; MINTS, A.A., red.; MURZAYEV, E.M., red.; NASIMOVICH, A.A., red.; POKSHISHEVSKIY, V.V., red.p POMUS, M.I., red.; ROZOV, N.N., red.; SOCHAVA, V.B., red.; FORMOZOV, A.N., red.; YANSHIN, A.L., red.

[Yakutia] IAkutiia. Moskva, Nauka, 1965. 464 p. (MIRA 18:8)

1. Akademiya nauk SSSR. Institut geografii. 2. Institut geografii AN SSSR (for Korzhuyev, Vitvitskiy). 3. Yakutskiy filial Sibirskogo otdeleniya AN SSSR (for Yegorov). 4. Moskovskiy oblastnoy pedagogicheskiy institut im. N.K.Krupskoy (for Naumov). 5. Pochvennyy muzey AN SSSR (for Zol'nikov). 6. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova (for Karavayev). 7. Proizvodstvennyy nauchno-issledovatel'skiy institut stroitel'stva Gosstroya SSSR (for Kachurin). 8. Institut geografii Sibiri i Dal'nego Vostoka Sibirskogo otdeleniya AN SSSR (for Kosmachev).

D'YAKONOV, G.

Enamel. Tekh, mâlod. 20, No 8, 1952.

DYAKONOV, G.K. (Deceased)

(Heat Engineering)

See ILC

L 3179-66 ETC(m) WW

ACCESSION NR: AP5015353 UR/0286/65/000/009/0098/0099
681.14

AUTHOR: Chekalov, D. N.; Mulyar, L. G.; Krasikov, V. I.; Miroshnichenko, A. K.; Smirnov, N. Ye.; Kheyfets, A. I.; Smirnov, K. F.; Obukhov, Yu. A.; Vorontsov, A. M.; D'yakonov, O. M.; Dubro, G. B.; Alipov, A. N.

TITLE: Electronic instrument for measuring velocity, distance traversed, and time. Class 42, No. 170776

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 9, 1965, 98-99

TOPIC TAGS: tellurometer, radio rangefinder, geodetic instrument

ABSTRACT: An Author Certificate, issued for a device which measures velocity, distance traversed, and time, combines a high-precision tellurometer, a phase recorder equipped with a unit for converting sinusoidal signals to pulsed signals, and a unit for measuring phase differences. Readings are made visually. The circuit connections of the device, consisting of a series of computer-type modules, are described in detail. [SP]

ASSOCIATION: none

Card 1/2

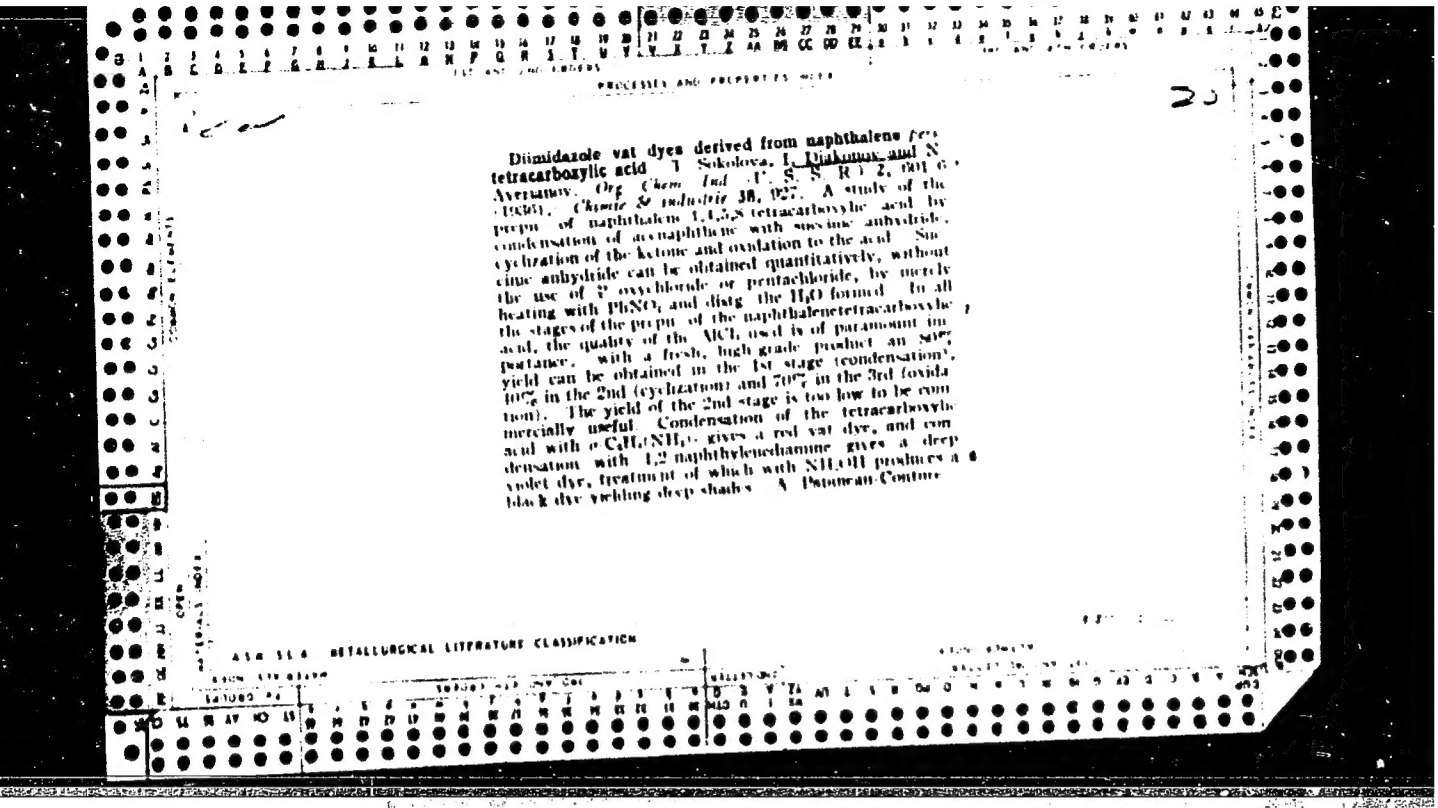
L 3179-66

ACCESSION NR: AP5015353

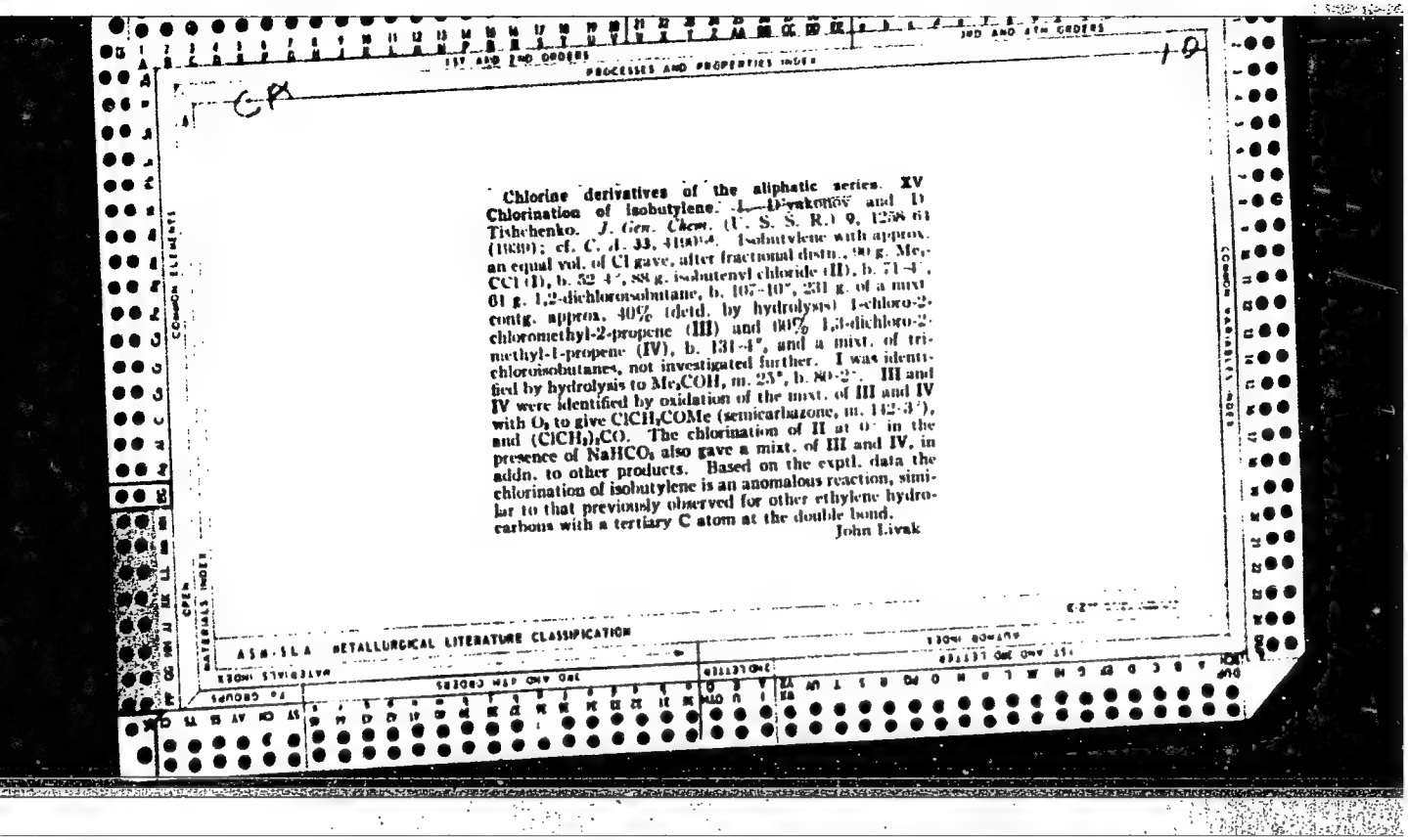
SUBMITTED: 04Mar63	ENCL: 00	SUB CODE: ES, EC
NO REF SOV: 000	OTHER: 000	ATD PRESS: 4025

EC

Card 2/2



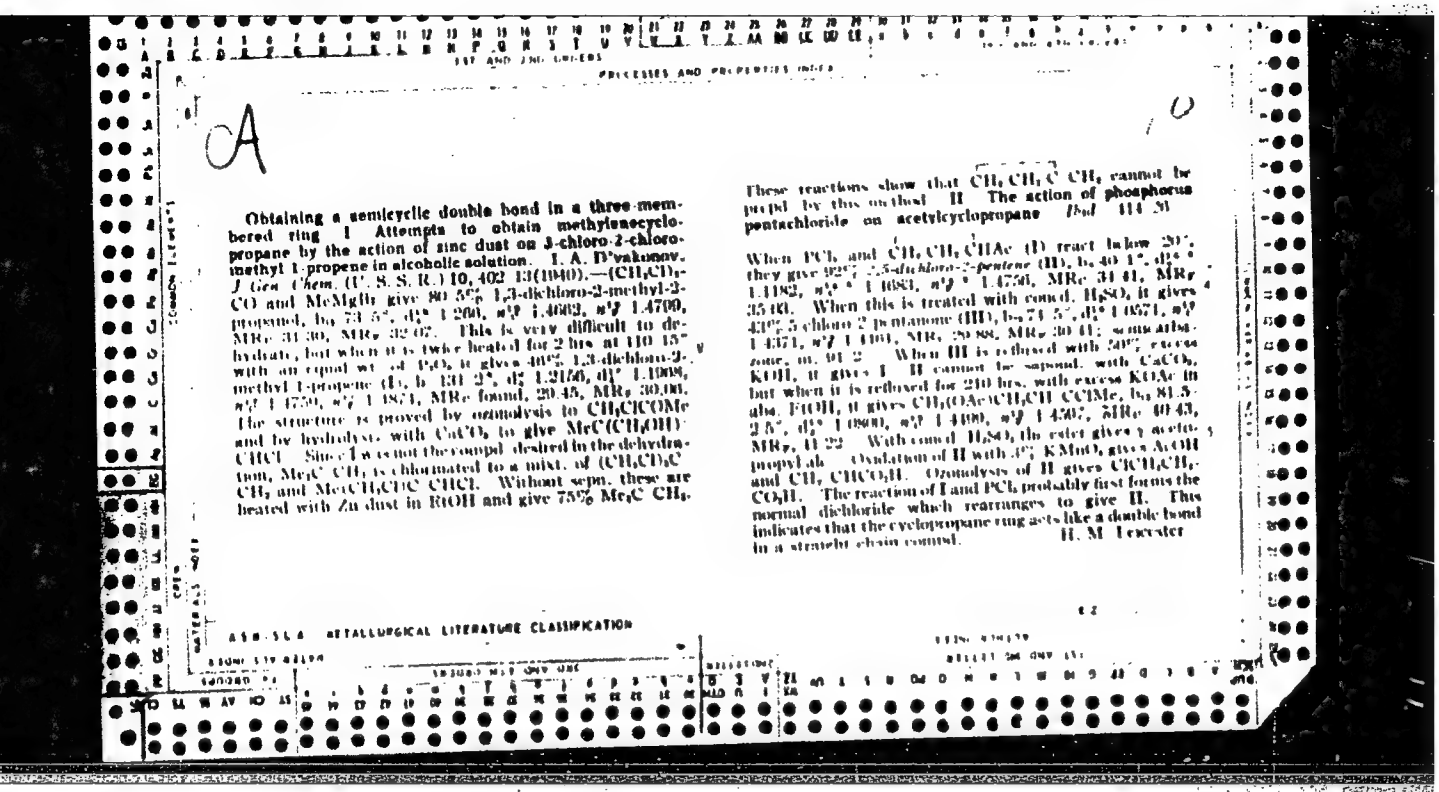
Diimidazole vat dyes derived from naphthalene *tet*-**tetracarboxylic acid** I Sokolova, L Dubrovina, and N Averianov. *Org Chem Ind* (U S S R) 2, 701 6 (1936). *Chimie & industrie* 38, 927. A study of the prepn of naphthalene 1,4,5,8 tetracarboxylic acid by condensation of acenaphthene with succinic anhydride, cyclization of the ketone and oxidation to the acid. Succinic anhydride can be obtained quantitatively, without the use of P oxychloride or pentachloride, by merely heating with $PhNO_2$ and distg the H_2O formed. In all the stages of the prepn of the naphthalenetetracarboxylic acid, the quality of the $AlCl_3$ used is of paramount importance. With a fresh, high grade product an 80% yield can be obtained in the 1st stage (condensation), 40% in the 2nd (cyclization) and 70% in the 3rd (oxidation). The yield of the 2nd stage is too low to be commercially useful. Condensation of the tetracarboxylic acid with o-$C_6H_4(NH_2)_2$ gives a red vat dye, and condensation with 1,2 naphthylenediamine gives a deep violet dye, treatment of which with NH_4OH produces a black dye yielding deep shades. A Patuncan-Couture



PROCESSES AND PROPERTIES INDEX

Chlorine derivatives of the aliphatic series. XV Chlorination of isobutylene. I. D'yakonov and D. Tishchenko. *J. Gen. Chem.* (U. S. S. R.) 9, 1258-61 (1939); cf. *C. A.* 33, 4189⁴. Isobutylene with approx. an equal vol. of Cl gave, after fractional distn., 90 g. Me_2CCl_2 (I), b. 52-4°, 88 g. isobutenyl chloride (II), b. 71-4°, 61 g. 1,2-dichloroisobutane, b. 107-10°, 231 g. of a mixt. contg. approx. 40% (detd. by hydrolysis) 1-chloro-2-chloromethyl-2-propene (III) and 60% 1,3-dichloro-2-methyl-1-propene (IV), b. 131-4°, and a mixt. of trichloroisobutanes, not investigated further. I was identified by hydrolysis to Me_2COH, m. 25°, b. 80-2°. III and IV were identified by oxidation of the mixt. of III and IV with O_3 to give $ClCH_2COMe$ (semicarbazone, m. 142-3°) and $(ClCH_2)_2CO$. The chlorination of II at 0° in the presence of $NaHCO_3$ also gave a mixt. of III and IV, in addn. to other products. Based on the exptl. data the chlorination of isobutylene is an anomalous reaction, similar to that previously observed for other ethylene hydrocarbons with a tertiary C atom at the double bond.

John Livak



A

Obtaining a semicyclic double bond in a three-membered ring. I. Attempts to obtain methylenecyclopropane by the action of zinc dust on 3-chloro-2-chloromethyl-1-propene in alcoholic solution. I. A. D'yakonov. *J. Gen. Chem.* (U. S. S. R.) 10, 402-13(1940).—$(CH_2Cl)_2CO$ and MeMgBr give 80.5% 1,3-dichloro-2-methyl-2-propanol, bp 73.5°, d_4^{20} 1.200, n_D^{20} 1.4693, n_F^{20} 1.4700, MRe 31.30, MRe 32.07. This is very difficult to dehydrate, but when it is twice heated for 2 hrs. at 110-15° with an equal wt. of P_2O_5 it gives 40% 1,3-dichloro-2-methyl-1-propene (I), b 131.2°, d_4^{20} 1.2176, d_4^{0} 1.1998, n_D^{20} 1.4750, n_F^{20} 1.4874, MRe found, 29.45, MRe 30.00. The structure is proved by ozonolysis to $CH_2ClCOMe$ and by hydrolysis with $CaCO_3$ to give $MeC(CH_2OH)CHCl$. Since I is not the compd. desired in the dehydration, Me_2CCH_2Cl is chlorinated to a mixt. of $(CH_2Cl)_2CCH_3$ and $MeClCH_2CHClCH_2Cl$. Without sepn. these are heated with Zn dust in EtOH and give 75% $Me_2C{:}CH_2$.

These reactions show that $CH_2{:}CH_2C{:}CH_2$ cannot be prepd. by this method. II. The action of phosphorus pentachloride on acetylcyclopropane. *Ibid* 414-20.

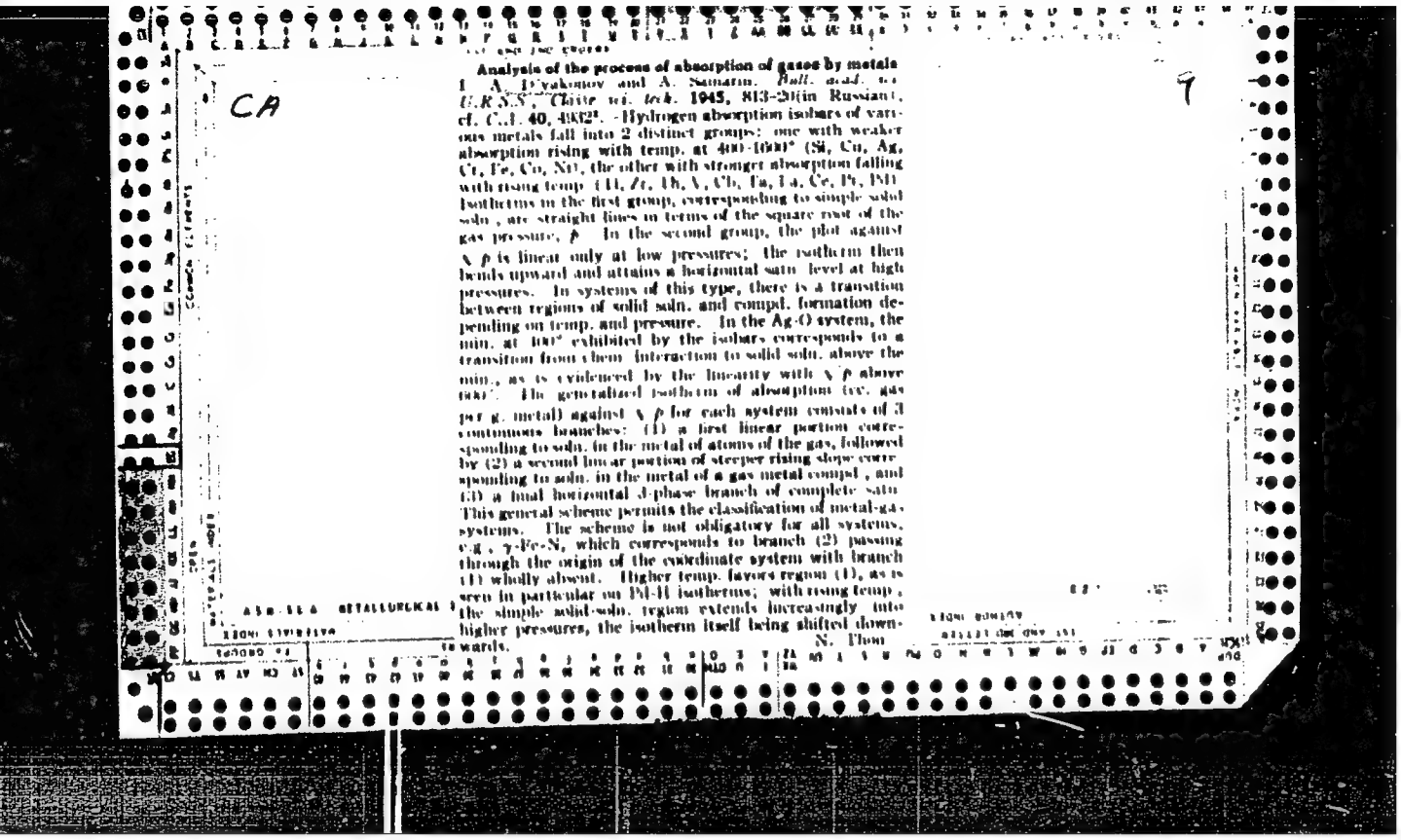
When PCl₅ and CH_2CH_2CHAc (I) react in the cold, they give 92% *2,5-dichloro-2-pentene* (II), b. 40.1°, d_4^{20} 1.1182, n_D^{20} 1.4881, n_F^{20} 1.4756, MRe 31.41, MRf 35.40. When this is treated with concd. H_2SO_4 it gives 43% 5-chloro-2-pentanone (III), b. 74.5°, d_4^{20} 1.0571, n_D^{20} 1.4371, n_F^{20} 1.4401, MRe 29.88, MRf 30.41; semicarbazone, m. 91.2°. When III is refluxed with 20% excess KOH, it gives I. II cannot be saponified with $CaCO_3$, but when it is refluxed for 240 hrs. with excess KOAc in abs. EtOH, it gives $CH_2(OAc)CH_2CH{:}CClMe$, bp 81.5-2.5°, d_4^{20} 1.0980, n_D^{20} 1.4480, n_F^{20} 1.4502, MRe 40.43, MRf, 41.22. With concd. H_2SO_4 the ester gives γ-acetopropyl alc. Oxidation of II with 4% KMnO₄ gives AcOH and CH_2ClCO_2H. Ozonolysis of II gives $CClH_2CH_2CO_2H$. The reaction of I and PCl_5 probably first forms the normal dichloride which rearranges to give II. This indicates that the cyclopropane ring acts like a double bond in a straight chain compd. H. M. Leicester

A58-5L4 METALLURGICAL LITERATURE CLASSIFICATION

DYAKONOV, J. A.

"The problem of obtaining Semicyclic Double Bond next to a Three Member Cycle. III. On the Reaction of Aliphatic Diazocompounds with Allene Hydrocarbons." Dyakonov, J. A. (p. 473)

SO: Journal of General Chemistry (Zhurnal Obshchei Khimii) 1945, Volume 15, no. 6.



CA

Analysis of the process of absorption of gases by metals

I. A. Dyakonov and A. Samarin. *Bull. acad. sci. U.R.S.S., Classe sci. tech.* **1945**, 813-20(in Russian; cf. *C.A.* **40**, 4852⁸). -Hydrogen absorption isobars of various metals fall into 2 distinct groups: one with weaker absorption rising with temp. at 400-600° (Si, Cu, Ag, Cr, Fe, Co, Ni), the other with stronger absorption falling with rising temp. (Ti, Zr, Th, V, Cb, Ta, La, Ce, Pt, Pd). Isotherms in the first group, corresponding to simple solid soln., are straight lines in terms of the square root of the gas pressure, $\sqrt{p}$. In the second group, the plot against $\sqrt{p}$ is linear only at low pressures; the isotherm then bends upward and attains a horizontal satn. level at high pressures. In systems of this type, there is a transition between regions of solid soln. and compd. formation depending on temp. and pressure. In the Ag-O system, the min. at 100° exhibited by the isobars corresponds to a transition from chem. interaction to solid soln. above the min., as is evidenced by the linearity with $\sqrt{p}$ above 100°. The generalized isotherm of absorption (vs. gas per g. metal) against $\sqrt{p}$ for each system consists of 3 continuous branches: (1) a first linear portion corresponding to soln. in the metal of atoms of the gas, followed by (2) a second linear portion of steeper rising slope corresponding to soln. in the metal of a gas metal compd., and (3) a final horizontal 3-phase branch of complete satn. This general scheme permits the classification of metal-gas systems. The scheme is not obligatory for all systems, e.g., γ-Fe-N, which corresponds to branch (2) passing through the origin of the coördinate system with branch (1) wholly absent. Higher temp. favors region (1), as is seen in particular on Pd-H isotherms; with rising temp., the simple solid-soln. region extends increasingly into higher pressures, the isotherm itself being shifted downwards.

N. Thon

1ST AND 2ND ORDERS

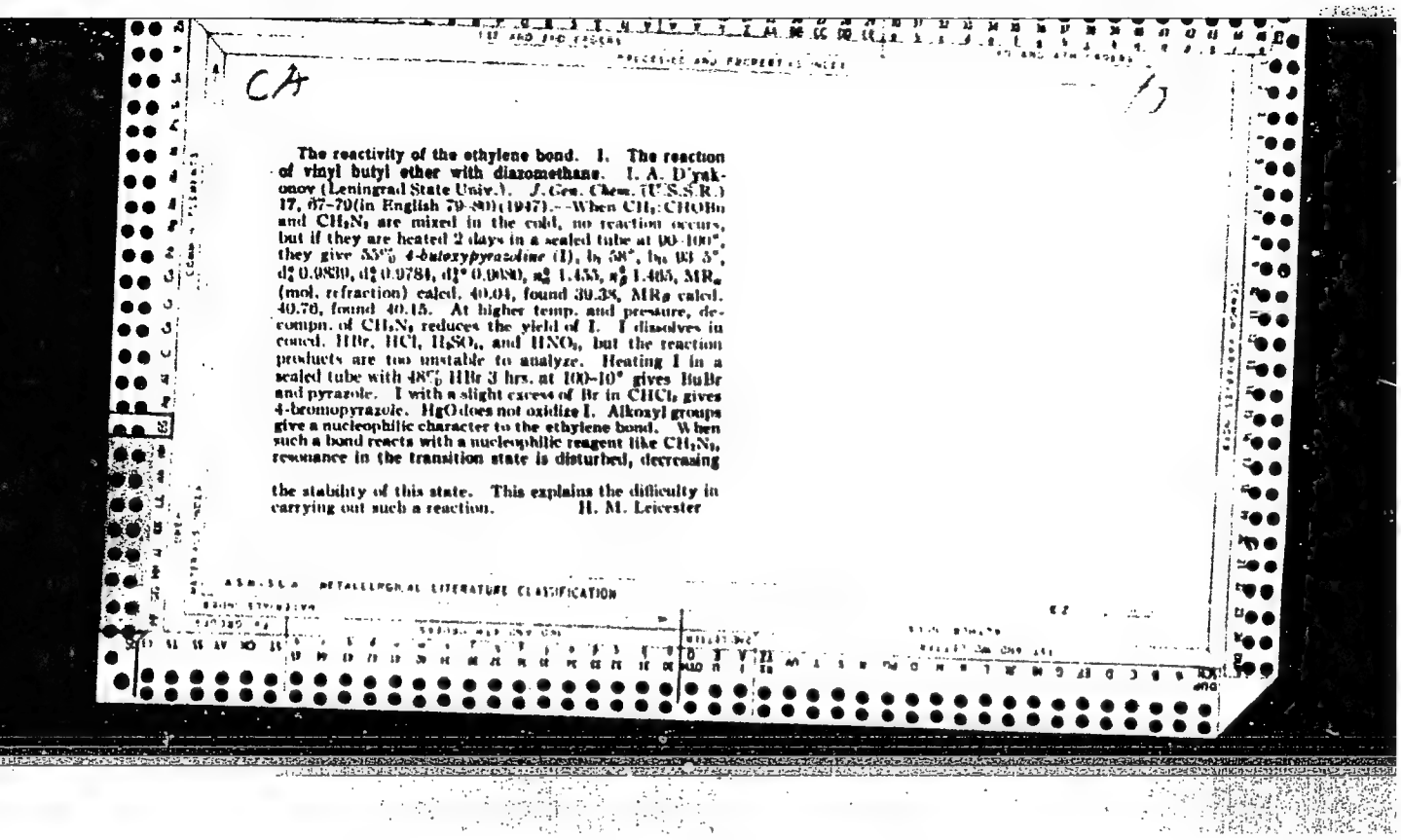
PROCESSES AND PROPERTIES INDEX

CA

10

Formation of a[illegible]cyclic double bond next to a three-membered ring. II. Reaction of aliphatic diazo compounds with all[illegible] hydrocarbons. I. A. D'yakonov (Leningrad State Univ.). *J. Gen. Chem.* (U.S.S.R.) 15, 473-87(1945)(Eng[illegible]h summary); cf. *C.A.* 34, 7861[1,2].—It was shown that [illegible] Et_2O at normal temps. and pressures CH_2N_2 reacts wi[illegible] allene very slowly, while increased pressure and c[illegible]n. greatly accelerate the reaction. Equimolar amts. [illegible]d to *methylenepyrazoline* which is very unstable to oxid[illegible]ion and polymerization. Dry allene (10 g.) in 100 cc[illegible]ry Et_2O was mixed with 5 g. CH_2N_2 in 250 cc. Et_2O a[illegible]d the course of the reaction was followed by test samples; [illegible] 0° in the dark the reaction is extremely slow, while incre[illegible] of temp. to 15° and admission of light causes considera[illegible] acceleration. After standing for 14 days and evapn. [illegible] the solvent, there was obtained 1-1.5 g. of a brown liq[illegible]l with a pyridine odor, which formed a very hygroscopic [illegible]nd unstable HCl salt; picrate, formed in EtOH, was eq[illegible]lly unstable when isolated. When the condensation wa[illegible]un in a sealed tube in the presence of but 25 cc. Et_2O a[illegible]oom temp. for 7 days the CH_2N_2 concn. was reduced to [illegible] very low figure, and complete reaction was observed in [illegible] days; removal of the volatile products gave 10.2 g. [illegible]*hylenepyrazoline* as a colorless liquid, which became [illegible]cous and colored on exposure to the atm.; distn. wa[illegible]lways accompanied by some decompn., b_{10} 48-51°, b_2 about 25°, d_4^0 1.808, $d_4^{17.5}$ 0.9924, d_4^{20} 0.9017, $n_\alpha^{17.5}$ 1.474, $n_D^{17.5}$ 1.487, $n_\gamma^{17.5}$ 1.495, n_α^{20} 1.473, n_D^{20} 1.486, n^{20} 1.494; dropping of the material on a mixt. of powd. KOH, Ag, and catalytic Pt at 200° led to the isolation of a small amt. of unreacted material, methylpyrazole, b_{10} 90°, N, and unidentified volatiles. Dimethylallene (6 g.) and 7.5 g. N_2CHCO_2Et were kept in a sealed tube at 80° for 10 days to yield 1 g. of a greenish oil, b_{10} 95-100°, d_4^0 1.114, d_4^{18} 1.099, d_4^{20} 1.1096, n^{15} 1.453, which appeared to be di-Et 1,1-dimethylspiropentanedicarboxylate, contaminated with an unknown N-contg. impurity. G. M. K.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA

The reactivity of the ethylene bond. I. The reaction of vinyl butyl ether with diazomethane. I. A. D'yakonov (Leningrad State Univ.). *J. Gen. Chem. (U.S.S.R.)* 17, 67–70 (in English 79–80) (1947).—When $CH_2:CHOBu$ and CH_2N_2 are mixed in the cold, no reaction occurs, but if they are heated 2 days in a sealed tube at 90–100°, they give 55% *4-butoxypyrazoline* (I), b_5 58°, b_{10} 93.5°, d_4^{20} 0.9830, d_4^{25} 0.9784, d_4^{30} 0.9680, n_D^{20} 1.455, n_D^{25} 1.465, MR_D (mol. refraction) calcd. 40.04, found 39.38, MR_β calcd. 40.76, found 40.15. At higher temp. and pressure, decompn. of CH_2N_2 reduces the yield of I. I dissolves in concd. HBr, HCl, H_2SO_4, and HNO_3, but the reaction products are too unstable to analyze. Heating I in a sealed tube with 48% HBr 3 hrs. at 100–10° gives BuBr and pyrazole. I with a slight excess of Br in $CHCl_3$ gives 4-bromopyrazole. HgO does not oxidize I. Alkoxyl groups give a nucleophilic character to the ethylene bond. When such a bond reacts with a nucleophilic reagent like CH_2N_2, resonance in the transition state is disturbed, decreasing the stability of this state. This explains the difficulty in carrying out such a reaction. H. M. Leicester

Reactions of aliphatic diazo compounds with unsaturated compounds. I. Reaction mechanisms. I. A. D'yakonov. *Zhur. Obshchei Khim.* (J. Gen. Chem.) **19**, 1734-43 (1949).—$RCHN_2$ can react with RCH:CHR either by formation of N-contg. cyclic derivs. (type I), or with elimination of N and formation of cyclopropane derivs. (type IIa) or olefinic substances (type IIb). Finally, combinations of types I and II occur. Type I was discussed earlier (D., *C.A.* **42**, 902*h*). Products of class II usually form from the cyclic intermediates formed by type I reactions. However, not all pyrazolines decomp., even on heating, with loss of N. Prepn. of trimethylenefluorene by CH_2N_2 reaction with methylenefluorene, or the reactions of C_6H_6 and homologs with N_2CHCO_2Et, probably do not proceed via a pyrazoline intermediate; the same is true of azulene derivs. prepd. by Plau and Plattner (*C.A.* **33**, 8370⁹). Similarly, prepn. of dimethyldinaphthylquinonemethane from CH_2N_2 and 3,7-dimethylnaphthoquinone does not apparently go via the pyrazoline route. A similar situation probably exists in reactions of $RCHN_2$ catalyzed by Cu. CH_2N_2 does not add to vinyl ethers, nor does N_2CHCO_2Et react even at 100°, unless Cu is present, when 80% yields of cyclopropane derivs. are formed; similar derivs. form from N_2CHCO_2Et and $AcOCH:CH_2$ in the presence of Cu; the diazo ester heated *per se* with Cu yields di-Et fumarate. The results of the "Loose reactions" (*C.A.* **4**, 759) cited above indicate the following probable steps: N_2CHCO_2Et, yields N and an unstable biradical, $EtO_2CCH<$, which either dimerizes or attacks a double bond of an available reaction component. Similarly, CH_2N_2 reactions may proceed via formation of $CH_2<$ radicals, a view supported by the behavior of CH_2N_2 on storage.

G. M. Kosolapoff

C A

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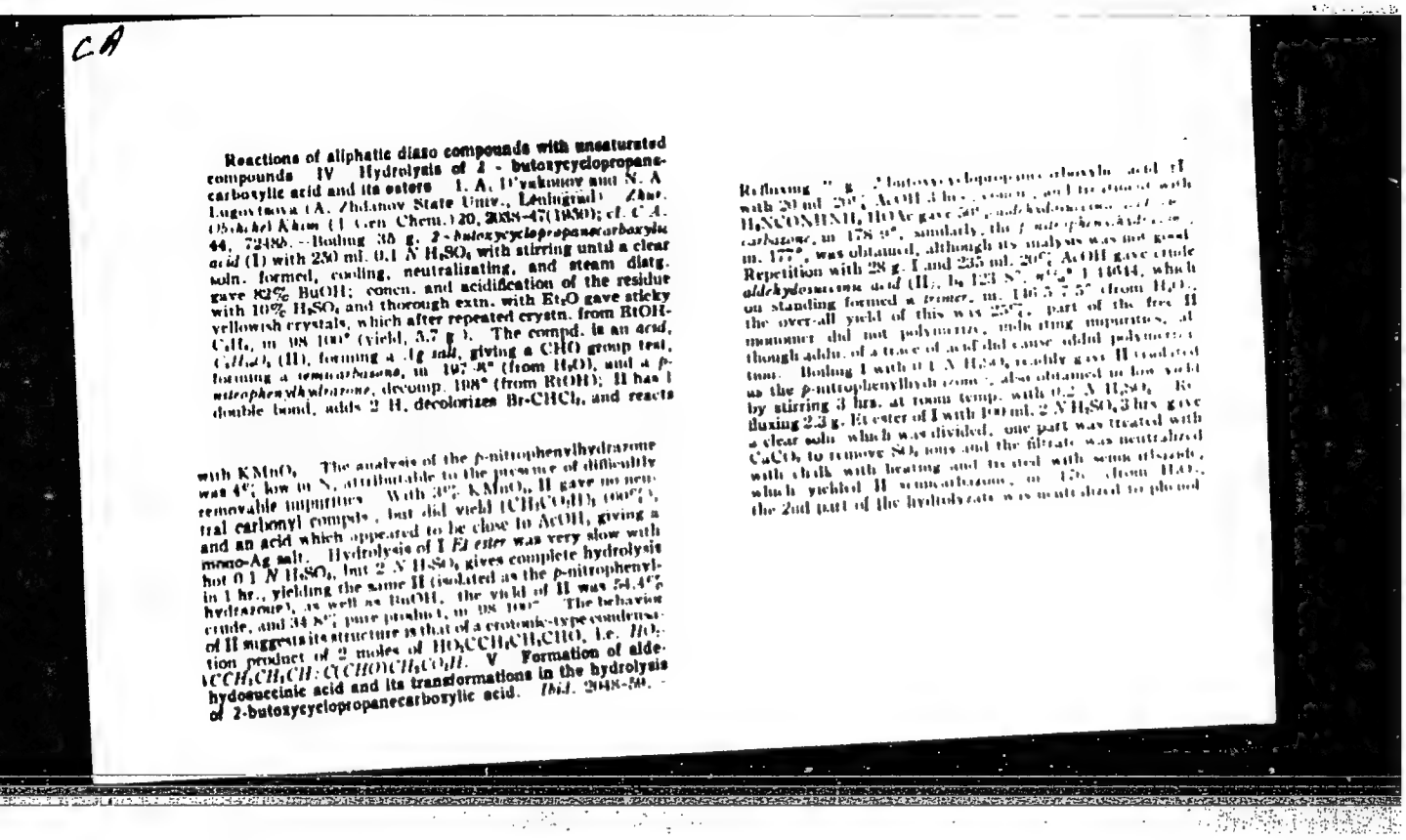
Reactions of aliphatic diazo compounds with unsaturated compounds. II. The reaction of diazoacetic ester with vinyl butyl ether in the presence of copper. I. A. D'yakonov (Khim. Inst., Leningrad, Gosudarst. Ordena Lenina Univ. im. A. A. Zhdanova), *Zhur. Obshchei Khim.* (J. Gen. Chem.) 19, 1891-1903(1949); cf. *C.A.* 44, 1014a.—Prepn. of N_2CHCO_2Et according to Gattermann-Wieland and Womack and Nelson(*C.A.* 38, 5793[2]) from glycine is more satisfactory if 2 *N* H_2SO_4 is used; the yields of pure product reach 65-70%, b_{10} 45.5-46.5°. Addn. of 40 g. N_2CHCO_2Et and 100 ml. CH_2:CHOBu to a suspension of 1 g. Cu powder in 300 ml. refluxing CH_2:CHOBu, followed by stirring 20-30 min., gave 90% recovery of unused ether and 55 g. (84.3%) $C_{10}H_{18}O_3$, b_{10} 105-8.5°; prolonged fractionation gave a fraction b_{10} 104.5-5.5°, d_4^{20} 0.9759, d_4^{10} 0.9504, n_D^{20} 1.431. Oxidation of 150 g. of the product with 12.3 g. $KMnO_4$ indicated that it is a mixt. of *Et butoxycyclopropanecarboxylate* with unsatd. linear isomers, possibly EtO_2CCH:CMeOBu or EtO_2CCH:$CHCH_2OBu$, the latter being destroyed by oxidation, resulting in 90% recovery of the *cyclic deriv.*, b_7 90.5-93°, b_{11-12} 102-3°, b_{17} 110-11°, d_4^{20} 0.0750, d_4^{20} 0.9677, d_4^{10} 0.9503, n_D^{20} 1.435, probably a mixt. of stereoisomers. Refluxing with 3% $KMnO_4$ gave succinic, butyric, and acetic acids.

G. M. Kosolapoff

Reactions of aliphatic diazo compounds with unsaturated compounds. III. 1-Butoxy-2-cyclopropanecarboxylic acid. I. A. D'yakonov (Leningrad State Univ.), *Zhur. Obshchel Khim.* (J. Gen. Chem.) 19, 2057-68 (1949); cf. C.A. 44, 1910e.—Refluxing 19 g. *Et 1-butoxy-2-chloropropanecarboxylate* (I) with 120 ml. 15% alc. KOH briefly, cooling, dilg. to 600 ml., and acidifying with dil. HCl gave 92% *free acid* (II), bp 143–4°; 94% is obtained by sapon. with 5% KOH at the b.p., followed by neutralization with CO_2, concn., and acidification with 5% H_2SO_4; 91% is obtained by sapon. with hot $Ba(OH)_2$ soln., the Ba salt being isolated in this case. Unless carefully performed, acidification of aq. solns. of salts of the acid leads to partial hydrolysis; extn. of alk. solns. of such crude products with Et_2O yields some BuOH and careful acidification of the main soln. with dil. H_2SO_4 without a large excess of the latter yields the pure acid; the aq. soln. after removal of the above acid on concn. and long extn. with Et_2O yields the 2nd product of hydrolytic cleavage of the cyclopropane deriv., an *aldehydo acid*, $C_4H_8O_3$, m. 99–100° (from EtOH), whose structure is unknown. The pure II, bp 143–4.5°, d_4^{20} 1.005, d_4^{25} 1.021, d_4^{30} 1.030, n_D^{20} 1.444, n_D^{25} 1.442; its *Ag salt* is poorly sol. in H_2O; the *Ba salt* was also isolated (from H_2O). Titration of II in the cold with NaOH gave higher than theoretical results, indicating that even the purified product contains some *butene* of *4-butoxy-4-hydroxybutanoic acid*, formed by isomerization of II. II with $KMnO_4$ gave $(CH_3CO_2H)_2$ and $PrCO_2H$. G. M. K.



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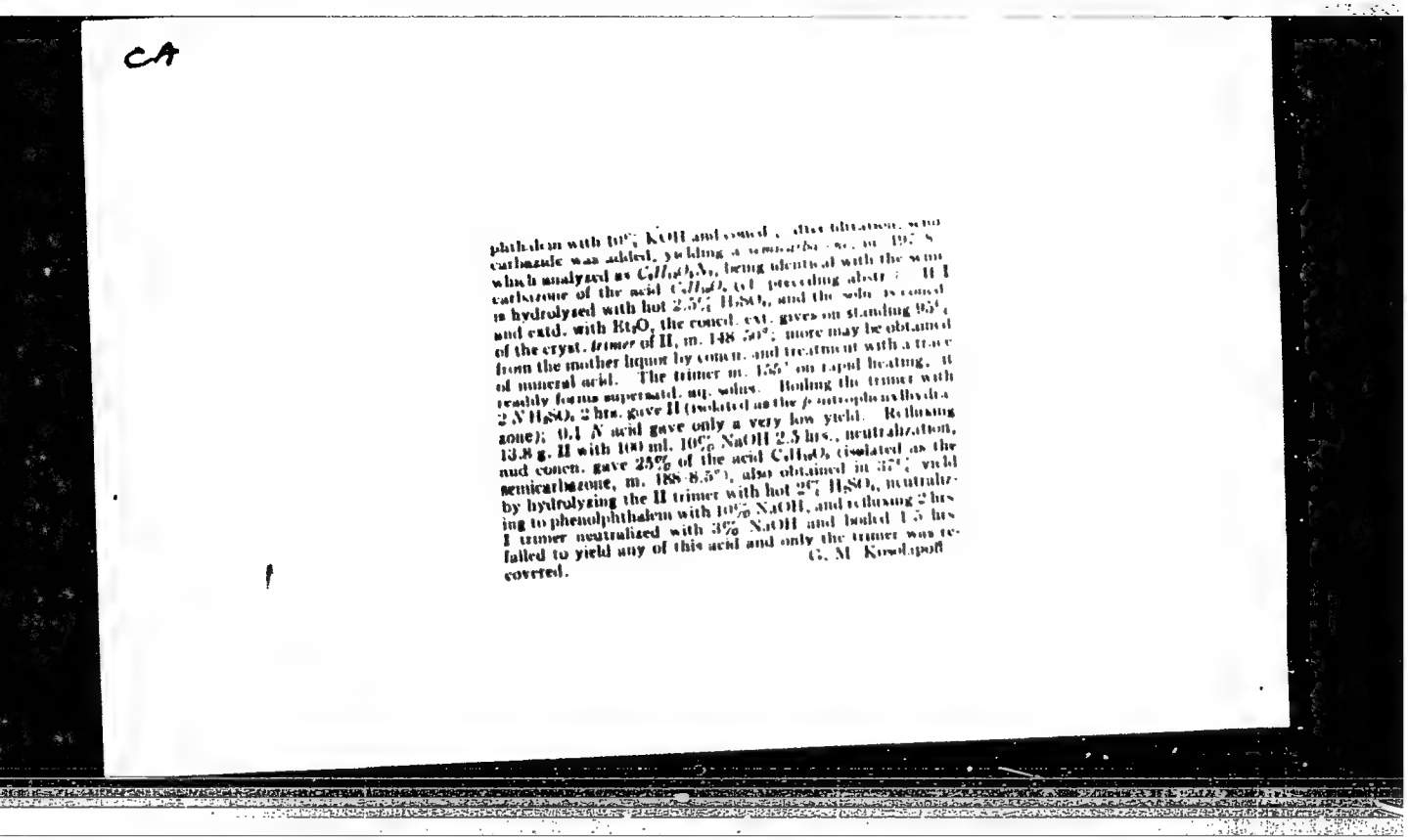
Reactions of aliphatic diazo compounds with unsaturated compounds IV Hydrolysis of 2 - butoxycyclopropanecarboxylic acid and its esters I. A. Favorskiĭ and N. A. Lugovtsova (A. Zhdanov State Univ., Leningrad) *Zhur. Obshchei Khim* (J. Gen. Chem.) 20, 2385-47(1950); cf. C. A. 44, 7248b.—Boiling 35 g. *2 - butoxycyclopropanecarboxylic acid* (I) with 230 ml. 0.1 *N* H_2SO_4 with stirring until a clear soln. formed, cooling, neutralizing, and steam distg. gave 82% BuOH; concn. and acidification of the residue with 10% H_2SO_4 and thorough extn. with Et_2O gave sticky yellowish crystals, which after repeated crystn. from BtOH-C_6H_6, m. 98 100° (yield, 5.7 g.). The compd. is an *acid*, $C_7H_{12}O_3$ (II), forming a Ag *salt*, giving a CHO group test, forming a *semicarbazone*, m. 197.8° (from H_2O), and a *p-nitrophenylhydrazone*, decomp. 198° (from BtOH); II has 1 double bond, adds 2 H, decolorizes Br-$CHCl_3$, and reacts with $KMnO_4$. The analysis of the *p*-nitrophenylhydrazone was 4% low in N, attributable to the presence of difficultly removable impurities. With 3% $KMnO_4$, II gave no neutral carbonyl compds., but did yield $(CH_3CO_2H)_2$ (60%), and an acid which appeared to be close to AcOH, giving a mono-Ag salt. Hydrolysis of I *Et ester* was very slow with hot 0.1 *N* H_2SO_4, but 2 *N* H_2SO_4 gives complete hydrolysis in 1 hr., yielding the same II (isolated as the *p*-nitrophenylhydrazone), as well as BuOH, the yield of II was 54.4% crude, and 34.8% pure product, m. 98 100°. The behavior of II suggests its structure is that of a crotonic-type condensation product of 2 moles of $HO_2CCH_2CH_2CHO$, i.e. $HO_2CCH_2CH_2CH:CCHOCH_2CO_2H$. V **Formation of aldehydosuccinic acid and its transformations in the hydrolysis of 2-butoxycyclopropanecarboxylic acid.** *Ibid.* 2048-50.—Refluxing 7 g. 2-butoxycyclopropanecarboxylic acid (I) with 20 ml. 20% AcOH 3 hrs., cooling, and treating with $H_2NCONHNH_2 \cdot HCl$ gave 50% semicarbazone of *aldehydosuccinic acid*, m. 178.5°, similarly, the *p*-nitrophenylhydrazone, m. 175°, was obtained, although its analysis was not good. Repetition with 28 g. I and 235 ml. 20% AcOH gave crude *aldehydosuccinic acid* (II), b$_{0.4}$ 123 8°, $n^{20}D$ 1.4644, which on standing formed a *trimer*, m. 146.5 7.5° (from H_2O); the over-all yield of this was 25% of the theory. part of the free II monomer did not polymerize, indicating impurities, although addn. of a trace of acid did cause addnl. polymerization. Boiling I with 0.1 *N* H_2SO_4, readily gave II semicarbazone, as the *p*-nitrophenylhydrazone, also obtained in low yield by stirring 3 hrs. at room temp. with 0.2 *N* H_2SO_4. Refluxing 2.3 g. Et ester of I with 100 ml. 2 *N* H_2SO_4 3 hrs. gave a clear soln. which was divided, one part was treated with $CaCO_3$ to remove SO_4 ions and the filtrate was neutralized with chalk with heating and treated with some ethanol, which yielded II semicarbazone, m. 175° (from H_2O), the 2nd part of the hydrolyzate was neutralized to phenol



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phthalein with 10% KOH and cooled, after titration, semicarbazide was added, yielding a semicarbazone, m. 197.5°, which analyzed as $C_{11}H_{15}O_3N_3$, being identical with the semicarbazone of the acid $C_{11}H_{16}O_3$ (I) preceding abstr. II I is hydrolyzed with hot 2.5% H_2SO_4, and the soln. is cooled and extd. with Et_2O, the concd. ext. gives on standing 95% of the cryst. *trimer* of II, m. 148.5°; more may be obtained from the mother liquor by concn. and treatment with a trace of mineral acid. The trimer m. 155° on rapid heating. It readily forms supersatd. aq. solns. Boiling the trimer with 2 *N* H_2SO_4 2 hrs. gave II (isolated as the *p*-nitrophenylhydrazone); 0.1 *N* acid gave only a very low yield. Refluxing 13.8 g. II with 100 ml. 10% NaOH 2.5 hrs., neutralization, and concn. gave 25% of the acid $C_{11}H_{16}O_3$ (isolated as the semicarbazone, m. 188–8.5°), also obtained in 37% yield by hydrolyzing the II trimer with hot 2% H_2SO_4, neutralizing to phenolphthalein with 10% NaOH, and refluxing 2 hrs. I trimer neutralized with 3% NaOH and boiled 1.5 hrs. failed to yield any of this acid and only the trimer was recovered.

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Reaction of aliphatic diazo compounds with unsaturated compounds. VI. Ethyl ester of 2-acetoxycyclopropanecarboxylic acid. I. A. D'yakonov. (A. A. Zhdanov State Univ., Leningrad). *Zhur. Obshchel Khim.* (J. Gen. Chem.) 20, 2289–2300(1950); *cf. C.A.* 44, 1916*e*; 45, 5032*b*.—To 400 ml. freshly distd. AcOCH:CH_2 and 1 g. Naturkupfer C was added at reflux with stirring 80 g. N_2CHCO_2Et and 80 ml. AcOCH:CH_2 (the amt. of evolved N was 100%). After 20–30 min. the cooled soln. is filtered and 295 g. AcOCH:CH_2 may be recovered by distn. Distn. of the residue gave about 9 g. tar and 63.7–71.6% $C_8H_{12}O_4$, b_5 94–5°, d_4^{20} 1.121, d_4^{20} 1.074, n_D^{20} 1.433, consisting largely of *Et 2-acetoxycyclopropanecarboxylate* (I) and other isomeric substances, including *di-Et fumarate*. Treatment with cold 2% $KMnO_4$ suffices to remove the impurities and pure I, b_5 90–2.5°, d_4^{20} 1.074, n_D^{20} 1.433, is obtained. The yield of I (pure) is 79% with a Cu catalyst, 82% with $CuSO_4$; com. diazoacetate gives only 66% I with a Cu catalyst, and larger amts. of the fumarate (about 11%). The by-products of $KMnO_4$ treatment are $(CH_2CO_2H)_2$ and AcOH. I with 3% $KMnO_4$ at 80° gave $(CH_2CO_2H)_2$ and AcOH. Hydrolysis of I by hot 5% NaOH gave 16% of the previously described acid, $C_4H_6O_3$ (II), m. 99° [*semicarbazone*, m. 187–8° (dihydrate), m. 198–9° (anhyd.)], and AcOH. Hydrolysis with aq. $Ca(OH)_2$ also gave II in very low yield while after-treatment with $KMnO_4$ gave $(CH_2CO_2H)_2$. Hydrolysis in aq $BaCO_3$ gave similar results, while $CaCO_3$ required several days of reflux. Hydrolysis of I with 10% H_2SO_4 by heating 4–5 hrs., followed by heating 3 hrs. with $CaCO_3$, gave 40% $HO_2CCH_2CH_2CHO$, identified as the *semicarbazone*, m. 177–8°, and *p-nitrophenylhydrazone*, m. 177°; when hydrolysis was continued for several days at reflux, II was isolated as the semicarbazone.

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Reactions of aliphatic diazo compounds with unsaturated compounds. VII. Diazoacetic ester with vinyl ethyl ether. I. A. Dyakonov and N. A. Lugovtsova (Leningrad State Univ.).—*J. Gen. Chem. U.S.S.R.* 21, 921–32(1951)(Engl. translation).—See *C.A.* 46, 4390*h*. **VIII. Diazoacetic ester with allyl bromide.** I. A. Dyakonov and N. B. Vinogradova (Leningrad State Univ.). *Ibid.* 933–42.—See *C.A.* 46, 4404*d*.

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Reactions of aliphatic diazo compounds with unsaturated compounds. IX. Reaction of diazoacetic ester with allyl alcohol in the presence of copper. I. A. D'yakonov and N. D. Pirogova (A. A. Zhdanov State Univ., Leningrad). *Zhur. Obshchel Khim.* (J. Gen. Chem.) 21, 1970–86(1951); cf. *C.A.* 46, 440d.—Addn. of 149 g. N_2CHCO_2Et in 120 ml. $CH_2:CHCH_2OH$ to a refluxing mixt. of 800 ml. $CH_2:CHCH_2OH$ and 0.4 g. Cu powder gave 83% N, with some 480 ml. recovered $CH_2:CHCH_2OH$; distn. of the products gave 82.5% *Et allyloxyacetate*, b_{20} 66–8°, b_{60} 72–4°, d_4^{20} 0.9836, n_D^{20} 1.4233, and some dark viscous matter which contained a higher-boiling cyclic deriv. (see below). Hydrolysis of the ester with EtOH-KOH gave *allyloxyacetic acid*, b_{20} 108–9°, d_4^{20} 1.0905, n_D^{20} 1.440, yielding an unstable *Ag salt*. The acid with $KMnO_4$ gave HCO_2H and $(CO_2H)_2$; ozonolysis gave much HCO_2H and unknown products. The acid with dry HBr gave allyl bromide and polyglycolide, $(C_2H_2O_2)_n$, m. 170°, which, heated with $PhNH_2$, gave *glycolanilide*, m. 95–6°; if the HBr treatment is done at elevated temp. it is possible to isolate *glycolic anhydride*, m. 128–9°. When the dark viscous reaction by-product (see above) was heated *in vacuo* it yielded some 7% *Et trans-2-(hydroxymethyl)-cyclopropanecarboxylate*, b_{20} 113–19°, d_4^{20} 1.0764, n_D^{20} 1.454, which with $KMnO_4$ gave 83% *trans-1,2-cyclopropanedicarboxylic acid*, m. 175°. X. **Reaction of diphenyldiazomethane with allyl alcohol.** I. A. D'yakonov. *Ibid.* 1966–95.—Addn. of 37 g. Ph_2CN_2 in 40 ml. $CH_2:CHCH_2OH$ to 200 ml. refluxing $CH_2:CHCH_2OH$ gave N and the concd. reaction mixt., treated overnight with EtOH, yielded some 7% $(Ph_2C:N)_2$, m. 161.5° (from EtOH), while the mother liquor gave after repeated fractionation 31.8% $Ph_2CHOCH_2CH:CH_2$, $b_{1.5}$ 130°, b_9 158–8.5°, d_4^{20} 1.053, n_D^{20} 1.574 [which, treated with HBr (best at 50–60°), gave Ph_2CHBr, allyl bromide, $CH_2(CH_2Br)_2$, and Ph_2CO], and 21.6% $CH_2.CPh_2.CHCH_2OH$, $b_{1.5}$ 160°, d_4^{20} 1.072, n_D^{20} 1.581 (*3,5-dinitrobenzoate*, m. 140°); the alc. with $KMnO_4$ gave 22% *2,2-diphenylcyclopropanecarboxylic acid*, m. 170–1°, whose *Ag salt* was analyzed; the latter is rather sol. in H_2O. The alc. failed to give a bromide with PBr_3, yielding decompn. products and polymers; under the best conditions, without much excess PBr_3, only small amts. of crude products, $b_{1.5}$ 102–6°, contg. a little Br were obtained. Attempted dehydration of the alc. with $KHSO_4$ gave an undistillable gum. G. M. Kosolapoff

D'YAKONOV, I. A.

"On the reactions of aliphatic diazocompounds with unsaturated compounds. X. The Investigation of the reaction of diphenyl-diazomethane with allyl alcohol." (p. 1986)

SO: Journal of General Chemistry (Zhurnal Obshchei Khimii) 1951, Vol 21, No 11.

D'YAKONOV, I. A.

Reactions of aliphatic diazo compounds with unsaturated compounds. XI. The reaction of diazoacetic ester with allyl chloride. I. A. D'yakonov and N. B. Vinogradova (Leningrad State Univ.). *Zhur. Obshchei Khim.* (J. Gen. Chem.) 22, 1349–53(1952); cf. *C.A.* 46, 6591*b*, 7002*e*.—To 600 g. refluxing CH_2:$CHCH_2Cl$ and 2.4 g. $(CuCl)_2$ (Naturcupfer C gives similar results) was slowly added 188.8 g. N_2CHCO_2Et in an equal vol. of CH_2:$CHCH_2Cl$; 85% N is collected at this stage and the catalyst assumes an orange color and part of it goes into soln.; treatment with 1:1 HCl and washing with Na_2CO_3 gives 16.7 g. EtO_2CCH_2Cl; 16 g. CH_2:$CHCH_2CHClCO_2Et$, b_{16} 66–7°, d_4^{20} 1.0530, n_D^{20} 1.4400; 11.9 g. *Et 2-(chloromethyl)cyclopropanecarboxylate* (I), b_6 82–4°, d_4^{20} 1.1091, n_D^{20} 1.4560 (which, refluxed 1 hr. with MeOH-KOH gave oily 2-(hydroxymethyl)cyclopropanecarboxylic acid (II), whose Ag salt was isolated); and 40.6 g. mixed di-Et fumarate and the above ester. II with $KMnO_4$ gave *trans-1,2-cyclopropanedicarboxylic acid*, m. 172°. I is not altered by refluxing with CH_2:$CHCH_2Cl$ and $(CuCl)_2$. The crude di-Et fumarate was identified in the mixt. after hydrolysis to the free acid. CH_2:$CHCH_2Br$ and N_2CHCO_2Et with a Cu catalyst similarly gave CH_2:$CHCH_2CHBrCO_2Et$, b_{11} 78–9°, and EtO_2CCH_2Br, the latter being formed only in small amounts. XII. Condensation reactions of diphenyldiazomethane and diazoacetic ester with allyl acetate. I. A. D'yakonov and O. V. Guseva. *Ibid.* 1355–62.—Refluxing CH_2:$CHCH_2OAc$, b. 103–4.5°, d_4^{17} 0.9277, n_D^{17} 1.4047 (75 ml.), treated slowly with 33 g. Ph_2CN_2 (I) in an equal vol. of CH_2:$CHCH_2OAc$, gave N and turned pale yellow; the combined runs of several expts. (210.6 g. Ph_2CN_2) gave after concn. and dilu. with EtOH some 12 g. solid, which after crystn. from EtOH and EtOH-C_6H_6, was sepd. into impure ketazine, $C_{26}H_{20}N_2$, m. 157–8°, giving no depression with ketazine prepd. from ale. iodine and Ph_2C:NNH_2 (cf. Curtius, *et al.*, *J. prakt. Chem.* (2) 44, 200(1891)), and a smaller amt. of a product, m. 172–3°, having the same compn. but giving a depression with authentic ketazine and yielding on hydrolysis with H_2SO_4 Ph_2CO and $N_2H_4.H_2SO_4$, as well as $(CHPh_2)_2$, also obtained from the *crude ketazine*, m. 157–8°, above. Distn. of the mother liquor gave 163.7 g. *1-(acetoxymethyl)-2,2-diphenylcyclopropane*, b_2 165–7°, $b_{0.5}$ 147–50°, $d_4^{20.5}$ 1.0914, n_D^{20} 1.5620, which, hydrolyzed with MeOH-KOH 1.5 hrs., gave the (*hydroxymethyl*) *analog*, $b_{0.4}$ 165–7°, n_D^{20} 1.583 (*3,5-dinitrobenzoate*, m. 140°). In addn. some 3.5% Ph_2CO was obtained. Refluxing CH_2:$CHCH_2OAc$ (380 ml.) and 2 g. dry $CuSO_4$ treated with 130.9 g. N_2CHCO_2Et in an equal vol. of CH_2:$CHCH_2OAc$ evolved some 93% N and the soln. yielded 70.6% crude *Et 2-(acetoxymethyl)cyclopropanecarboxylate*, which after purification with 3% cold $KMnO_4$ gave the *pure ester*, $b_{0.5}$ 76–7°, b_{11} 128–9°, b_4 106–7°. $d_4^{18.5}$ 1.070, $n_D^{18.5}$ 1.4429, whose Raman spectrum had the lines (cm.$^{-1}$) 636.4(3), 746(3), 840.9(1), 862.2(2), 889.7(2), 1033.4(2), 1098.9(2), 1118.5(2), 1202.9(3), 1455(3), 1455(5), 1728.7(3), 2948(5), and 3137(4). The aq. soln. from the purification yielded some $(CO_2H)_2$. The cyclic ester refluxed with 2 *N* KOH until it was transparent gave, after careful neutralization and evapn., 55.7% *trans-2-(hydroxymethyl)cyclopropanecarboxylic acid*, m. 64–5°, which with 3% $KMnO_4$ gave *trans-1,2-cyclopropanedicarboxylic acid*, m. 175°. The oily residue from the (hydroxymethyl) cyclic acid solidified after drying *in vacuo* and gave, in addn. to 7 g. of the above acid, some 17 g. *cis-(2-hydroxymethyl)-1,2-cyclopropanedicarboxylic acid lactone*, b_2 60–70°, d_4^{20} 1.199, d_4^{20} 1.180, n_D^{20} 1.4652, which reacts rather slowly with 0.1 *N* NaOH, and which shows the Raman lines 185(6), 243(4),

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378(5), 558(1), 613(0), 643(2), 705(10), 780(0), 829(5), 850(9), 899(4), 952(8), 976(0), 994(4), 1038(2), 1055(2), 1112(3), 1171(7), 1220(2), 1309(3), 1344(4), 1373(1), 1450(3), 1481(4), 1760(6), 2910(5), 2981(4), 3002(5), and 3085(8). The lactone with KOH-$KMnO_4$ gave *cis-1,3-cyclopropanedicarboxylic acid*, m. 138-9°. G. M. K.

DIAKONOV, I. A.; GUSEVA, O. V.

Diazo Compounds

Reactions of aliphatic diazo compounds with unsaturated compounds. Part 12. Investigation of reactions of condensation of diphenyldiazomethane and diazoacetic ester with allyl acetate. Zhur, ob. khim., 22, No. 8, 1952, p 1355.

Monthly List of Russian Accessions, Library of Congress, November 1952. Unclassified.

D'YAKONOV, I. A.

Chemical Abst.
Vol. 48 No. 3
Feb. 10, 1954
Organic Chemistry

Reactions of aliphatic diazo compounds with unsaturated compounds. XIII. Reaction of diazoacetic ester with allyl iodide and with normal and tertiary butyl bromides in the presence of copper catalysts. I. A. D'yakonov and N. D. Vinogradova (A. A. Zhdanov State Univ., Leningrad). *Zhur. Obshchei Khim.* 23, 66–71(1953); cf. *C.A.* 47, 4293*c*.—To 560 g. dry CH_2:$CHCH_2I$ and 0.8 g. Bu bronze was added at reflux 175 g. N_2CHCO_2Et and 175 g. CH_2:$CHCH_2I$; 29.5 l. N were collected during the ensuing reaction and distn. of the filtrate gave 70% CH_2:$CHCH_2CHICO_2Et$, b_4 65–82°; redistn. gave 47% of pure ester, b_1 65–6°, n_D^{20} 1.5062, d_{20} 1.558. Some 25 g. crude ICH_2CO_2Et was also obtained. The ester refluxed in EtOH–65% AcOH with Zn dust gave 65.2% CH_2:$CHCH_2CH_2CO_2Et$, b_{12} 43–4°, d_{20} 0.9016, n_D^{20} 1.416. Oxidation of the ester with $KMnO_4$ gave $(CH_2CO_2H)_2$ and AcOH. Hydrolysis of the ester with 10% K_2CO_3 gave the free acid, CH_2:$CHCH_2CH(OH)CO_2H$, which gave an *anilide*, m. 74–5°, in very low yield; most of the acidic material polymerized, yielding what was evidently *polyvinylacrylic acid*. Reaction of 360 g. Me_2CBr with 135.7 g. N_2CHCO_2Et in the presence of 0.5 g. dry $CuSO_4$ gave 15.1 g. $BrCH_2CO_2Et$, b. 156–60°, n_D^{20} 1.4455, d_{20} 1.414; after shaking with cold $KMnO_4$ to remove unsatd. by-products the pure ester, b. 156–60°, n_D^{20} 1.4485; treated with Zn-AcOH it gave AcOH; the higher-boiling fractions from the above condensation gave 20.2 g. *di-Et fumarate*, $b_{1.5}$ 65°, d_{20} 1.0503, n_D^{20} 1.4410. Similar reaction with BuBr gave 37.2% di-Et fumarate when Cu bronze was used as catalyst. The probable courses of the above reactions are discussed. Probably the haloacetates are formed in these reactions by interaction of unused diazo acetate with the already formed allyl haloacetate through heterolytic cleavage of CX and CH links in the latter, which competes with the normal homolytic reaction of the $CHCO_2Et$ residue. G. M. Kosolapoff

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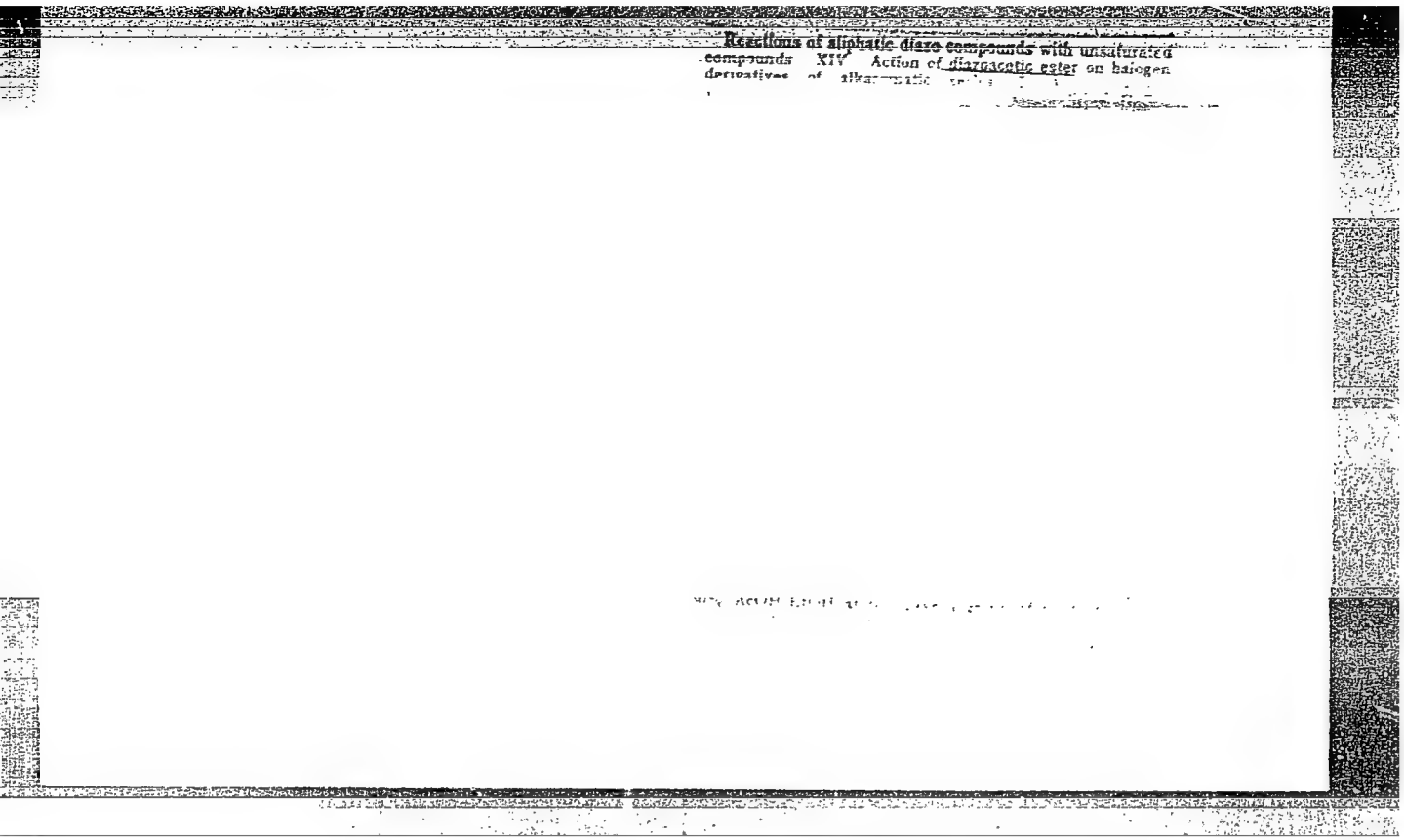


Reactions of aliphatic diazo compounds with unsaturated compounds. XV. *trans*-2-(Halomethyl)cyclopropane-1-carboxylic acids and their esters. I. A. D'yakonov and (Z. V.) Gubeva (A. A. Zhdanov State Univ., Leningrad), *Sbornik Statei Obshchei Khim., Akad. Nauk S.S.S.R.* 1, 135–33(1953); cf. *C.A.* 48, 3318*i*.—Reactions of 2-hydroxymethyl- and 2-halomethylcyclopropane-1-carboxylic acids or their esters are not accompanied by isomerizations or rearrangements in contrast to the observations of Dem'yanov on α-hydroxy(or halo)alkyl cyclopropanes. To 23.2 g. *2-hydroxymethylcyclopropanecarboxylic acid* (I) was slowly added 9.1 g. PCl_3, the mixt. heated until HCl evolution ceased at 50–5°, then treated with 27.5 g. PCl_3 and heated further 3 hrs. finally to 80°; on cooling the liquid was decanted into ice H_2O, while the solid material was similarly hydrolyzed; extn. with C_6H_6 gave 25–30% crude product, which gave 12–15% pure *trans-2-chloromethylcyclopropane-1-carboxylic acid* (II), m. 90.5–1.5° (from $CHCl_3$-petr. ether), Raman spectrum given. The acidic aq. mother liquor on treatment with $NaHCO_3$ followed by prolonged extn. with Et_2O gave 40% original I, m. 93–4°. The yields of the Cl deriv. were not improved by using various solvents or higher temp. To a liquid mixt. of $SOCl_2$-$POCl_3$ obtained from 65 g. PCl_5 was added 15 g. I at 0°, followed by 11 g. pyridine, the mixt. was then slowly heated to 90° and kept there until gas evolution stopped; the mixt. was filtered and the filtrate treated with ice H_2O yielding 99% II, m. 90.5–1.5°. Oxidation of 3.8 g. II with 3% $KMnO_4$ in 10% KOH gave *trans-cyclopropane-1,2-dicarboxylic acid* (III), m. 164–9° (crude), pure, m. 174–5°. To 5 g. Na dissolved in 90 ml. EtOH was added 9 g. II and the mixt. refluxed 3 hrs., yielding after neutralization, evapn., and acidification, 93.6% *trans-2-ethoxymethylcyclopropane-1-carboxylic acid*, b$_{0.4}$ 87°, n^{25}_D 1.4535, n^{20}_D 1.4525, d_4 1.005; after standing the product solidified, m. 41° (from petr. ether). The same product forms in 42% yield from II and KOH soln. in abs. EtOH after 2 hrs. reflux. Oxidation of the product with $KMnO_4$ gave III. To 3.48 g. I was added 21.6 g. PBr_3 and the mixt. was briefly heated to 95°, cooled and treated with ice, yielding an oily acyl bromide, which on gentle warming in H_2O gave 78.2% *trans-2-bromomethylcyclopropane-1-carboxylic acid*, m. 97.5–8° (from $CHCl_3$-petr. ether). If the intermediate reaction mixt. is treated with abs. EtOH instead of ice, there is formed 31% *Et ester of trans-2-bromomethylcyclopropane-1-carboxylic acid*, b$_{11}$ 103°, d_4 1.393, d_{20} 1.370, d_{21} 1.364, n^{25}_D 1.4787, n^{20}_D 1.4778; the product yields AgBr on treatment with $AgNO_3$, Raman spectrum given. This (4.14 g.) added to 1.5 g. Na in abs. EtOH and refluxed 1.5 hrs. gave the above described *trans-2-ethoxymethylcyclopropane-1-carboxylic acid* (IV), m. 40°. Refluxing 10.7 g. II in MeEtCO with 15 g. NaI 12 hrs. gave 96% *trans-2-iodomethylcyclopropane-1-carboxylic acid*, m. 85.5–6° (from Me_2CO-petr. ether); this acid is not very stable and readily loses its iodine with $AgNO_3$ or in alkaline solns. Treated with NaOEt in EtOH it gave 67.2% IV. Refluxing the iodo acid with dil. NaOH readily gave I. Refluxing I with 10% H_2SO_4 6 hrs. gave 70% original acid, but the use of 25% H_2SO_4 prevented the recovery of I. XVI. Reaction of diazoacetic ester with isoprene and the derivatives of cyclopropane and bicyclopropane. I. A. D'yakonov and V. E. Myznikova. *Ibid.* 489–97; cf. *C.A.* 47, 4293*e*.—To 100 g. CH_2:CMeCH:CH_2 and 0.5 g. dry $CuSO_4$ under N was added at reflux 87 g. Et diazoacetate; evolution of N usually did not begin even after 30–50% of the ester had been added; the reaction is initiated by the addn. of 0.2–0.3 g. powd. Cu bronze after about 50% of the ester has been added. Induction period is reduced by the catalyst very significantly. After 4–6 hrs. some 80% N had been evolved; evapn. of the residue and distn. gave 35.8% *Et 3-methyl-3-vinylcyclopropane-1-carboxylate* (I), b$_{11}$ 80–4°,

A. D'yakonov and 212
O.V. Guseva

n_D^{20} 1.4623, along with a minor by-product, which was purified from the combined products of several runs; this material is composed of 12.6% di-Et fumarate and a mixt. (II) of unsepd. *isomeric di-Et esters*, $C_{11}H_{18}O_4$. Pure I b_4 60–1°, d_{20} 0.9451, n_D^{20} 1.4515. Oxidation of I with $KMnO_4$ gave AcOH and 49% *trans-1-methylcyclopropane-1,2-dicarboxylic acid* (III), m. 168°. Ozonolysis of I gave HCO_2H, CO_2, and a substance, b_{3-4} 115–50°, which was further treated with $KMnO_4$ yielding III; in addn., there was also obtained crude *2-acetylcyclopropane-1-carboxylic acid*, identified only provisionally. Hydrogenation of I over Pt in 95% EtOH gave *Et 2-methyl-2-ethylcyclopropane-1-carboxylate* (IV), b_{10} 61°, b_{11} 63–4°, d_{20} 0.9075, n_D^{20} 1.4276. II, d_{20} 1.506, n_D^{20} 1.4600, was ozonized and the product heated with alkali to saponify any esterified material; there was obtained no AcOH and only traces of HCO_2H, but there was obtained a good yield of *2-methyl-2,2'-bicyclopropane-1,1'-dicarboxylic acid* (V), m. 169–70°. I (14.3 g.) and 0.8 g. $CuSO_4$ heated with 10 g. Et diazoacetate as above gave 47.6% *di-Et ester* of V, b_4 113°, d_{20} 1.0470, n_D^{20} 1.4617. Hydrolysis of this with 2*N* NaOH at reflux gave a low yield of V, m. 169–70°, whose *di-Ag salt* is sparingly sol. in H_2O and is unstable in light. V itself is rather unstable on heating, since it readily forms a gluelike mass on a steam bath (cf. Staudinger, *et al.*, *C.A.* 18, 2135). It appears thus that with catalysis by $CuSO_4$ the addn. of diazoacetate to isoprene occurs in 1,2-position, rather than in 3,4-position. The Raman spectra of I and IV are given. G. M. K.

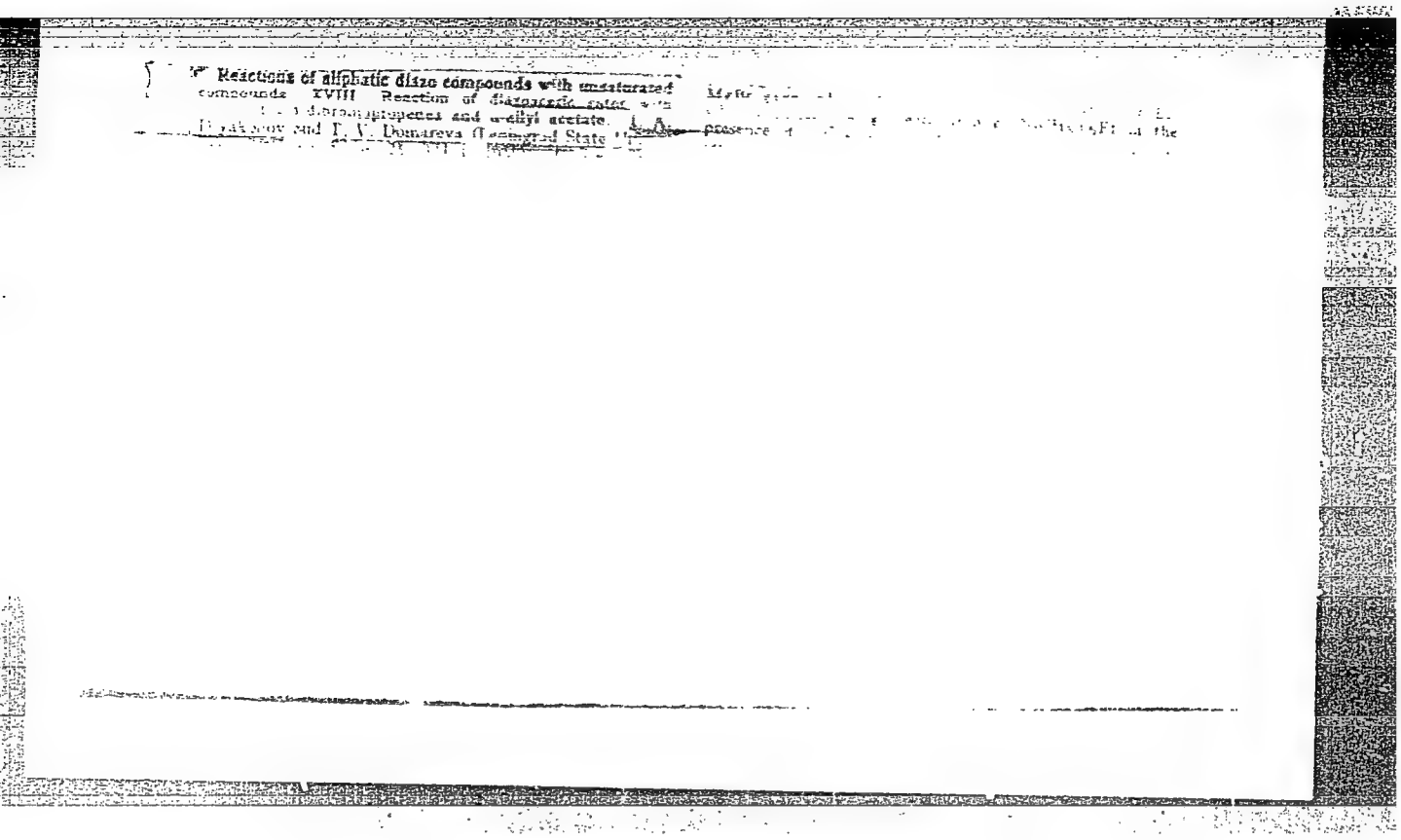
D'YAKONOV, I. A. and MYZNIKOV, V. F.

On Reactions of Aliphatic Diazo Compounds with Unsaturated Compounds. XVI. On the Reaction of Diazo Acetic Ester with Isoprene and on Derivatives of Cyclopropane and B_1-Cyclopropane, page 489, Sbornik statey po obshchey khimii (Collection of Papers on General Chemistry), Vol I, Moscow-Leningrad, 1953, pages 762-766.

Chair of the Structure of Organic Compounds, Leningrad State U

Reactions of aliphatic diazo compounds with unsaturated compounds. XVII. Reaction of diazoacetic ester with esters of unsaturated acids and with mesityl oxide in [illegible] copper catalysts. I. A. D'yakonov [illegible] Leningrad State Univ. [illegible]

1.4480, apparently $C_6H_{10}(OH)_2$ was saponified with 10% NaOH 1 hr. at reflux, yielding Me_2CO and [illegible] methyl [illegible] cyclopropanecarboxylic acid, m. [illegible]



Reactions of aliphatic diazo compounds with unsaturated compounds. XVIII. Reaction of diazoacetic ester with dehydrolinalool and methyl acetate.

[illegible] and T. V. Dunareva [illegible] State [illegible] presence [illegible] the

D'YAKONOV, I. A.

6

Reactions of aliphatic diazo compounds with unsaturated compounds. XIX. Reaction of diazoacetic ester with 2,3-dichloropropene in the presence of copper sulfate. I. A. D'yakonov and T. V. Domareva (State Univ., Leningrad). *Zhur. Obshchei Khim.* 25, 1489–93(1955); cf. C.A. 50, 3221f. —2,3-Dichloropropene (480 g.) with 169 g. N_2CHCO_2Et in the presence of 1.8 g. $CuSO_4$ at 70–80° gave 93.6% N and a range of products which were sepd. into: $ClCH_2CO_2Et$ (3.1 g.), $C_7H_{12}O_4Cl_2$ (I) (84.4 g.) and an *involatile* fraction (II) (30.9 g.). I treated with aq. $KMnO_4$ at 0° gave 17.6% pure *Et cis-2-chloromethyl-2-chlorocyclopropanecarboxylate*, b_5 72–3°, d_{20} 1.231, n_D^{20} 1.469, extd. with Et_2O from the mixt., the aq. soln. heated with HNO_3–$AgNO_3$ gave up 11.5% Cl, while extn. with Et_2O of the acidified soln. yielded 13 g. crude $HO_2CCH_2CHClCO_2Et$ [treatment with alc. KOH followed by hydrogenation over Pd gave $(CH_2CO_2H)_2$]. I also contained about 8% di-Et fumarate estd. by difference in detn. of EtO content and gravimetrically. II treated with cold $KMnO_4$ gave 8.5% pure *Et trans-2-chloromethyl-2-chlorocyclopropanecarboxylate*, b_5 98–9°, d_{20} 1.244, n_D^{20} 1.473; the aq. soln. after oxidation gave oxalic acid and possibly some 0.8% $CH_2{:}CClCH_2CHClCO_2Et$. Refluxing the cis ester with 10% Na_2CO_3 gave ***cis-2-hydroxymethyl-2-chlorocyclopropanecarboxylic acid***, m. 100–7° (from Me_2CO-C_6H_6); oxidation with $KMnO_4$ gave ***cis-1-chlorocyclopropane-1,2-dicarboxylic acid***, m. 156–7°. Similarly the trans ester gave ***trans-2-hydroxymethyl-2-chlorocyclopropanecarboxylic acid***, m. 108–9°, which yielded on oxidation ***trans-2-chlorocyclopropane-1,2-dicarboxylic acid***, m. 194–6°.

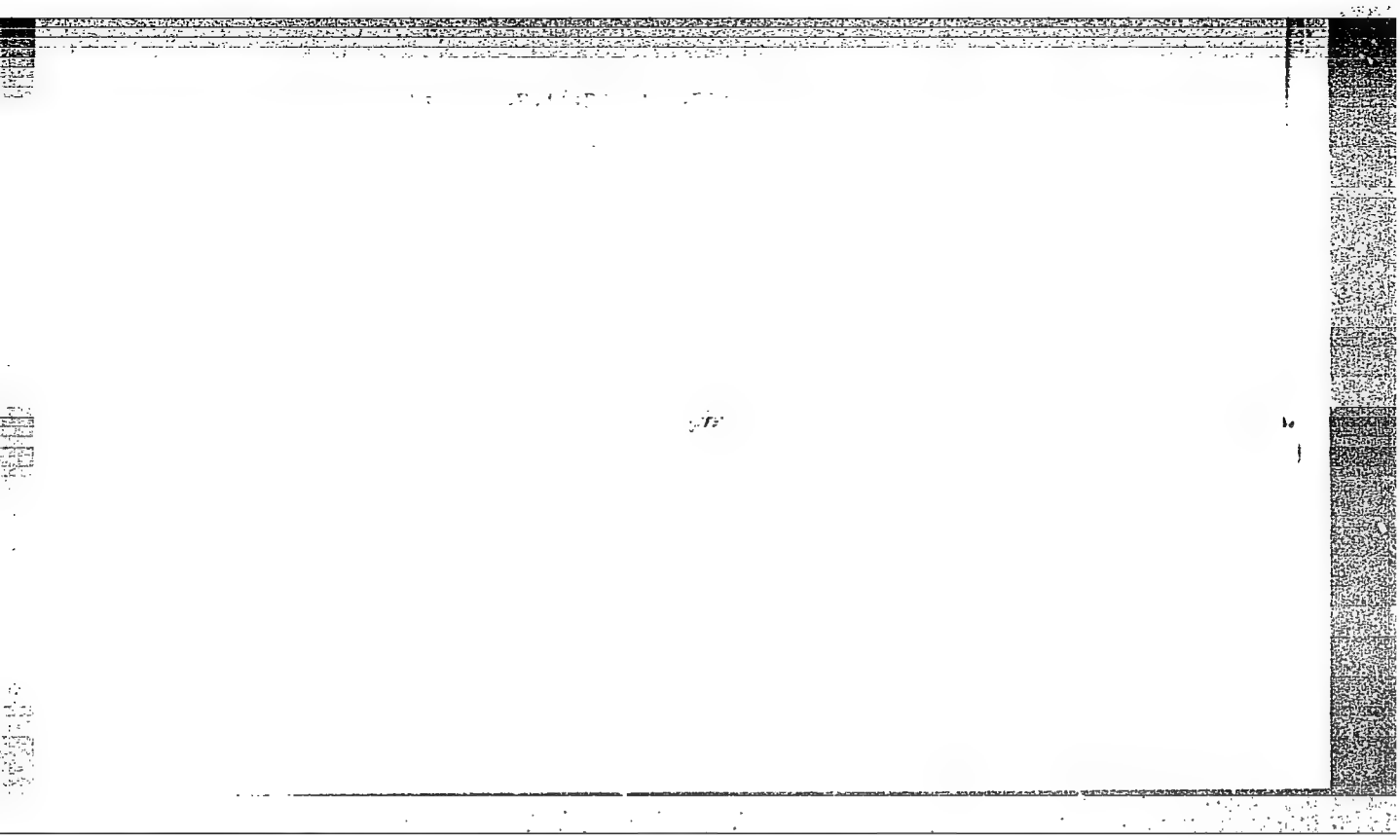
G. M. Kosolapoff

(1)

D'yakonov, I. A.

Distr: 4E4J/4E2c(J)/4E3d

A new reaction of ethyl diazoacetate with acetylene hydrocarbons. Synthesis of substituted cyclopropenes. I. A. D'yakonov and M. I. Komendantov. *Vestnik Leningrad. Univ.* 11, No. 22, Ser. Fiz. i Khim. No. 4, 160–9(1956).—EtO_2CCHN_2 and PhC:CMe in cyclohexane contg. anhyd. $CuSO_4$ under an N atm. form 41.8% Et methylphenylcyclopropenecarboxylate (I), 13.4% (based on PhC:CMe) Et 2-phenyl-4-methyl-1-cyclobutene-1,3-dicarboxylate (II), and 28.3% (based on EtO_2CCHN_2) di-Et fumarate. I b. below 1 mm., d_{20} 1.082, n_D^{20} 1.5080, exaltations EM_D 2.86 and $E\Sigma_D$ 1.40. The double bond would seem to be at position 2 from the method of synthesis, but could be at 1 or 3. However, the mol. exaltation and the low amt. of CH_2O isolated on ozonolysis are against I being a methylenecyclopropane. I absorbs at 2990 A., 9.51, 6.20, 6.35, 6.45, and 5.96 μ (3-C atom ring and aromatic double bonds), and 8.50, 8.35, and 5.78 μ (ester group). Hydrogenation of I gives a mixt. of stereoisomeric Et 2-methyl-3-phenyl-1-cyclopropanecarboxylates, d_{20} 1.0341, n_D^{20} 1.5097, hydrolyzed with the isolation of a single acid, m. 48–9°. The same ester, λ 9.93, 9.51, 9.65, 8.51, and 8.35 μ, was prepd. from MeCH:CHPh and EtO_2CCHN_2. II, d_{20} 1.0948, n_D^{20} 1.5230, λ 10.95, 6.10 6.20, 6.25, 6.35 μ, on hydrolysis gave the free acid, m. 181–2°, and on hydrogenation (Pt), di-Et 2-methyl-4-phenyl-1,3-cyclobutanedicarboxylate, d_{20} 1.0848, n_D^{20} 1.5070; free acid m. 184–5°. John Howe Sexton



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PHASE I BOOK EXPLOITATION 977

D'yakonov, Ivan Aleksandrovich

Alifaticheskiye diazosoyedineniya; stroyeniye, svoystva i reaktsii (Aliphatic Diazo Compounds; Structure, Properties and Reactions) [Leningrad] Izd-vo Leningradskogo univ-ta, 1958. 137 p. 2,000 copies printed.

Sponsoring Agency: Leningrad. Universitet

Ed.: Shchemeleva, Ye.V.; Tech. Ed.: Vodolagina, S.D.

PURPOSE: This book is for research students, scientists, and non-specialists in the field of organic chemistry.

COVERAGE: This book discusses the structure and reactivity of aliphatic diazo-compounds, describes their physical and chemical properties, and includes certain reactions which are not sufficiently covered in the existing literature. The main object of the book is to present the theoretical problems in the study of the structure, properties, and reactions of aliphatic diazo-compounds. The results of physical computations (the determination of inter-atom space and dipole moments) in some cases do not fully agree with the representation of compounds by chain formulas. An explanation for the contradiction between experimental data and theoretical claims was attempted by sev-

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eral authors on the basis of the "theory of electron resonance", while others offer no solution at all (see Chichibabin, A.Ye., Osnovyye nachala organicheskov khimii, 5th Ed., Vol. 1, Mos.-Lening. (Goskhimizdat) 1953, pp. 663). The authors of this volume have solved this problem by expressing the structural formula of diazomethane graphically. There are also considerations given for expressing both the static and dynamic states of organic compounds. Reactions of important preparative value, for example, the reactions with olefins which yield cyclopropane derivatives or reactions with aromatic hydrocarbons which aid in the synthesis of bicyclic compounds and others are given special consideration. The author has brought the book up to date by rewriting Chapter 11 and adding to Chapter 9. M.I. Komendantov participated in the editing of the manuscript. There are 14 tables and 332 references, 79 of which are Soviet, 129 German, 107 English, 8 Swiss, 3 Dutch, 5 Italian and 1 Czech.

TABLE OF CONTENTS:

AVAILABLE: Library of Congress

Card 3/3

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D'YAKONOV, I. A. Doc Chem Sci -- (diss) "Study in the field of aliphatic diazo compounds and low-stability cyclopropane derivatives." Len, 1959. 48 pp (Len Order of Lenin State Univ im A. A. Zhdanov), 150 copies. Bibliography: pp 47-48 (28 titles) (KL, 45-59, 143)

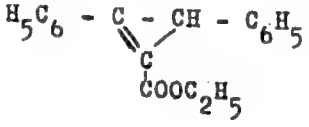
5(2)

AUTHORS: D'yakonov, I. A., Komendantov, M. I. SOV/79-29-5-72/75

TITLE: Letters to the Editor (Pis'ma v redaktsiyu). Reaction of Diazoacetic Ester With Acetylene Hydrocarbons (Vzaimodeystviye diazouksusnogo efira s atsetilenovymi uglevodorodami)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 5, pp 1749 - 1751 (USSR)

ABSTRACT: An earlier publication (Ref 1) reported of the production of 3-methyl-2-phenyl cyclopropene carboxylic acid ester. The physical constants of the compound were determined anew and were found to deviate from the earlier data. American authors described 2,3-diphenyl-Δ_2-cyclopropene-1-carboxylic acid ester (Ref 2). The results obtained here do not agree. Synthesis, melting point, boiling point, analysis and infrared spectra are given. Chemical and spectral analysis render the following formula probable:



Card 1/2

Letters to the Editor. Reaction of Diazoacetic Ester With Acetylene Hydrocarbons

SOV/79-29-5-72/75

There are 2 references, 1 of which is Soviet.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet (Leningrad State University)

SUBMITTED: January 19, 1959

Card 2/2

5 (3)

AUTHORS: D'yakonov, I. A., Domareva, T. V. SOV/79-29-9-63/76

TITLE: On the Reaction of Diazoacetic Ester with 9-Phenyl- and 9-(p-tolyl)-9-bromofluorenes. Synthesis of the Fluorene and Phenanthrene Derivatives

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 9, pp 3098-3105(USSR)

ABSTRACT: It was reported recently that in the reaction of diazoacetic ester with 9-bromofluorenes in the presence of copper sulphate (Ref 1) only 9,9'-difluoryl and bromoacetic ester was obtained instead of the condensation product to be expected, i. e. the ester of 9-fluoryl bromoacetic acid $(C_6H_4)_2CHCHBrCOOC_2H_5$. The authors explain this result by the insufficient stability of the free fluoryl radical which is formed in the chain reaction with diazoacetic ester (Ref 1). Since it was to be expected that the introduction of the aryl group into position 9 increases the stability of the radical, the reaction with 9-aryl-9-bromofluorenes should yield higher results. The present paper is intended to give an experimental proof on this assumption. It is shown that in the condensation of diazoacetic ester with 9-phenyl-9-bromofluorene in the presence of copper sulphate the ethyl ester of 9-phenylphenanthrene-10-carboxylic acid (I) is formed. In this case the five-

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On the Reaction of Diazoacetic Ester with 9-Phenyl- and 9-(p-tolyl)-9-bromofluorenes. Synthesis of the Fluorene and Phenanthrene Derivatives

membered cycle of the fluorenyl residue expands into a six-membered one (Scheme 2). The reaction of diazoacetic ester with 9-(p-tolyl)-9-bromofluorene takes place in two directions: 1) expansion of the cycle and formation of the ethyl ester of 9-(p-tolyl)-phenanthrene-10-carboxylic acid (III) and 2) rearrangement of the tolyl group and formation of the ethyl ester of α-(p-tolyl)-β,β-diphenyl acrylic acid (IV) (Scheme 2). According to the earlier concept of the authors concerning the free radical chain mechanism of the reactions of diazoacetic ester with halogen derivatives of the hydrocarbons (Ref 1) taking place in the presence of copper, the reaction mechanism of the diazoacetic ester with 9-phenyl and 9-(p-tolyl)-9-bromofluorene can be represented according to the total scheme on page 3100. The following compounds were newly synthesized: the ethyl esters of 9-phenyl- and 9-(p-tolyl)-phenanthrene-10-carboxylic acid; 9-(p-tolyl)-phenanthrene-10-carboxylic acid; α-(p-tolyl)-β,β-diphenylene acrylic acid; 1,2,3,4-dibenzo-7-methylfluorenone and 9-(p-tolyl)-9-bromofluorene.

SOV/79-29-9-63/76

On the Reaction of Diazoacetic Ester With 9-Phenyl- and 9-(p-tolyl)-9-bromofluorenes. Synthesis of the Fluorene and Phenanthrene Derivatives

There are 15 references, 3 of which are Soviet.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet
(Leningrad State University)

SUBMITTED: September 9, 1958

Card 3/3

D'YAKONOV, I.A.; FAVORSKAYA, I.A.; DANILKINA, L.P.; AUVINEN, E.M.

Reaction of dichlorocarbene with enyne hydrocarbons. Zhur.ob. khim. 30 no.10:3503-3504 O '61. (MIRA 14:4)

1. Leningradskiy gosudarstvennyy universitet.
(Carbene) (Pentenyne) (Hexenyne)

D'YAKONOV, I.A.; FU GUY-SIYA; KORICHEV, G.E.; KOMENDANTOV, M.I.

Stereoselective course of the reaction between carbethoxycarbene and steroisomeric 1,2-diphenylethenes. Zhur. ob. khim. 31 no.2:681-683 F '61. (MIRA 14:2)

1. Leningradskiy gosudarstvennyy universitet.
(Carbene) (Ethylene)

D'YAKONOV, I.A.; KOMENDANTOV, M.I.

Remarks concerning the article by Breslow and Chipmen "Synthesis of derivatives of cyclopropene according to D'iakonov." Zhur.ob.khim. 31 no.10:3483-3485 O '61. (MIRA 14:10)

(Cyclopropene)

D'YAKONOV, I.A.; KOMENDANTOV, M.I.

Reactions of aliphatic diazo compounds with unsaturated compounds. Part 20: Reaction of ethyl diazoacetate with 1-phenylpropyne in the presence of copper sulfate. Zhur.ob.khim. 31 no.12:3881-3893 D '61. (MIRA 15:2)

1. Leningradskiy gosudarstvennyy universitet.
(Diazo compounds)
(Propyne)
(Acetic acid)

33924
S/079/62/032/002/011/011
D243/D303

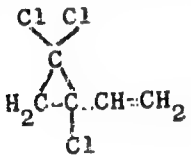
5.3832

AUTHORS: D'yakonov, I.A., Nizovkina, T.V. and Kornilova, T.A.

TITLE: Reaction of dichlorocarbene with chloroprene

PERIODICAL: Zhurnal obshchey khimii, v. 32, no. 2, 1962, 664-665

TEXT: The authors wished to confirm that dichlorocarbene, on reacting with chloroprene, joins in the 1,2 position. Investigation showed that this occurred, 1,2, 2-trichloro-1-vinyloyclopropane (I) being formed - a colorless liquid which darkens in air and forms a solid polymer. B.p. = 63-63.5° at 25 mm Hg; d_4^{20} = 1.3330, n_D^{20}=1.5007. On ozonization of (I) or its oxidation by aq.$KMnO_4$ (II) was obtained which is described for the first time; m.p. = 94-95°C (from hexane).



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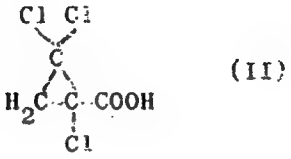
Card 1/2

Reaction of dichlorocarbene ...

It is concluded that of the two chloroprene double bonds, the bond at the 1,2 position is more nucleophilic than that at the 3,4 position. The steric factor which depends on the presence of a chlorine atom at the second carbon atom of the chloroprene molecule, does not play an important role in determining the reaction's direction. There are 10 references: 3 Soviet-bloc and 7 non-Soviet-bloc. The 4 most recent references to the English-language publications read as follows: M.Orchin and E.C. Herrick, J.Org.Ch.,24,139 (1959); A. Ledwith and R.M. Bell, Chem.a. Ind., 1959; 459; W.E. Parham and E.E.Schweitzer, J.Org.Ch.,24,1733(1959); W.V. Doering and W.A. Henderson, J.Am.Chem.Soc., 80, 5274,(1958).



(II)

ASSOCIATION: Leningradskiy gosudarstvennyy universitet (Leningrad State University)

SUBMITTED July 14, 1961

Card 2/2

D'YAKONOV, I.A.; KOMENDANTOV, M.I.; KORSHUNOV, S.P.

Reactions of aliphatic diazo compounds with unsaturated compounds. Part 21: Reaction of diazoacetic ester with 1-phenylpropyne in the presence of small amounts of copper sulfate or without catalysts. Zhur.ob.khim. 32 no.3:923-928 Mr '62. (MIRA 15:3)

(Acetic acid) (Propyne)

D'YAKONOV, I.A.; KOMENDANTOV, M.I.; FU GUY-SIYA; KORICHEV, G.L.

Reactions of aliphatic diazo compounds with unsaturated compounds. Part 22: Catalytic condensation of diazoacetic ester with cis- and trans-stilbenes and 4-octenes. Synthesis of new derivatives of cyclopropane. Zhur.ob.khim. 32 no.3:928-939 Mr '62. (MIRA 15:3)

1. Leningradskiy gosudarstvennyy universitet.
(Acetic acid) (Unsaturated compounds) (Cyclopropane)

D'YAKONOV, I.A.; DANILKINA, L.P.

Reaction of dichloro- and carbethoxycarbene with 2-methyl-1-penten-3-yne. Zhur.ob.khim. 32 no.3:1008-1009 Mr '62. (MIRA 15:3)

1. Leningradskiy gosudarstvennyy universitet.
(Carbene) (Pentenyne)

KOSTIKOV, R.R.; D'YAKONOV, I.A.

Synthesis of 1-methylol-2,3-di-n-butyl-2-cyclopropene and stereoisomeric 1-methylol-2,3-di-n-butylcyclopropanes. Zhur.ob. khim. 32 no.7:2389-2390 Jl '62. (MIRA 15:7)

1. Leningradskiy gosudarstvennyy universitet.
(Cyclopropene) (Cyclopropane)

D'YAKONOV, I.A.; BEGIDOV, S.Kh.; DOMAREVA, T.V.

Reaction of dicyclopropyl ketone with magnesium bromoalkyls, and synthesis of 1, 1-dicyclopropyl-1, 3-butadiene. Zhur.ob.khim. 31 no.10:3479 O '61. (MIRA 14:10)

1. Leningradskiy gosudarstvennyy universitet imeni A.A.Zhdanova.
(Ketone) (Magnesium compounds) (Butadiene)

D'YAKONOV, I.A., prof.

Some reactions of methylene radicals. Zhur. VKHO 7 no.4:436-447 '62. (MIRA 15:8)
(Methylene group)

D'YAKONOV, I.A.; BEGIDOV, S.Kh.

Synthesis of ditertiary acetylenic γ-glycols containing cyclopropyl radicals. Vest. LGU 17 no.16:158-159 '62. (MIRA 15:9)

(Glycols) (Radicals (Chemistry))

D'YAKONOV, I.A.; NIZOVKINA, T.V.; GREBENKINA, V.M.

Addition of the carbethoxycarbene to chloroprene.
Zhur.ob.khim. 32 no.10:3450 O '62. (MIRA 15:11)

1. Leningradskiy gosudarstvennyy universitet.
(Carbene) (Chloroprene)

D'YAKONOV, I.A.; GOLODNIKOV, G.V.; REPINSKAYA, I.B.

Reaction of diazoacetic ester with trimethylvinylsilane catalyzed by copper sulfate. Zhur.ob.khim. 32 no.10:3450-3451 O '62. (MIRA 15:11)

1. Leningradskiy gosudarstvennyy universitet.
(Serine) (Silane)

D'YAKONOV, I.A.; KOMENDANTOV, M.I.; RAZIN, V.V.

Synthesis of new derivatives of bicyclobutane. Zhur.ob.khim. 33 no.7:2420-2421 Jl '63. (MIRA 16:8)

1. Leningradskiy gosudarstvennyy universitet.
(Bicyclobutane)

GOLODNIKOV, G.V.; D'YAKONOV, I.A.; REPINSKAYA, I.B.; FOMINA, O.S.

Copper sulfate catalyzed reaction of diazoacetic ester with 3-trimethylsilyl-1-propene and 4-trimethylsilyl-1-butene. Zhur.ob.khim. 33 no.7:2422-2423 Jl '63. (MIRA 16:8)

1. Leningradskiy gosudarstvennyy universitet.
(Silicon organic compounds) (Acetic acid)

BEGIDOV, S.Kh.; D'YAKONOV, I.A.; KOROBITSYNA, I.K.

Synthesis and dehydration of di-tertiary γ-glycols containing the cyclopropyl radicals. Zhur.ob.khim. 33 no.7:2431 Jl '63. (MIRA 16:8)

1. Leningradskiy gosudarstvennyy universitet.
(Glycols)

D'YAKONOV, I.A.; KOMENDANTOV, M.I.

Reactions of aliphatic diazo compounds with unsaturated compounds. Part 23: Reaction of ethyl ester of diazoacetic acid with diphenylacetylene. Zhur. ob. khim. 33 no.8:2448-2456 Ag '63. (MIRA 16:11)

1. Leningradskiy gosudarstvennyy universitet.

HEGIDOV, S.Kh.; DOMAREVA, T.V.; D'YAKONOV, I.A.

Unsaturated hydrocarbons containing a cyclopropyl radical. Part 1: 1,1-Dicyclopropyl-1,3-butadiene, 2-cyclopropyl-2,4-pentadiene, and 1,1-dicyclopropyl-1-butene. Zhur.ob.khim. 33 no.10:3426-3433 O '63. (MIRA 16:11)

1. Leningradskiy gosudarstvennyy universitet.

D'YAKONOV, I.A.; DOMAREVA-MANDEL'SHTAM, T.V.; RAZIN, V.V.

Reaction of diazoacetic ester with 1,3-cyclohexadiene. Zhur. ob.khim. 33 no.10:3437-3438 O '63. (MIRA 16:11)

1. Leningradskiy gosudarstvennyy universitet.

D'YAKONOV, I.A.; GOLODNIKOV, G.V.; REPINSKAYA, I.B.; FOMINA, O.S.

Reactions of diphenylmethylene and carbethoxycarbene with alkenylsilanes. Zhur.ob.khim. 33 no.10:3438-3439 O '63. (MIRA 16:11)

1. Leningradskiy gosudarstvennyy universitet.

D'YAKONOV, I.A.; STROYMAN, I.M.

Preparation of 1,1-dicyclopropylethylene. Zhur.ob.khim. 33 no.12: 4019-4020 D '63. (MIRA 17:3)

1. Leningradskiy gosudarsvennyy universitet.

KOSTIKOV, R.R.; D'YAKONOV, I.A.

Dissociation constants of some substituted cyclopropane- and cyclopropenecarboxylic acids. Dokl. AN SSSR 149 no.4:853-855 Ap '63. (MIRA 16:3)

1. Leningradskiy gosudarstvennyy universitet im. A.A.Zhdanova. Predstavleno akademikom B.A.Kazanskim.
(Cyclopropanecarboxylic acid) (Cyclopropenecarboxylic acid) (Ionization)

BELEN'KIY, B.G.; VITENBERG, A.G.; D'YAKONOV, I.A.

Use of 1,2,3-tris-(2-cyanoethoxy)propane as a stationary phase for gas-liquid chromatography. Izv.AN SSSR. Ser.khim. no.1:193-195 Ja '64. (MIRA 17:4)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR i Leningradskiy gosudarstvennyy universitet.

D'YAKONOV, I.A.; DANILKINA, L.P.

Reactions of carbenes with diene, enyne, and diyne systems. Part 1: Reactions of dichloro-, dibromo-, and carbethoxycarbenes with 2-methyl-1-penten-3-yne. Zhur. ob. khim. 34 no. 3:738-748 Mr '64. (MIRA 17:6)

1. Leningradskiy gosudarstvennyy universitet.

D'YAKONOV, I.A.; FOSTIKOV, R.R.

Cyclopropanes and cyclopropenes. Part 1: Synthesis of stereoisomeric 1,2-di-n-butylcyclopropane-3-carboxylic acids and their esters. Zhur. ob. khim. 34 no. 5:1383-1389 My '64. (MIRA 17:7)

1. Leningradskiy gosudarstvennyy universitet.

L'YAKONOV, I. A.; KOSTIKOV, R. R.

Problem of obtaining double bond linkage in cyclopropene . . . formation. Part 1: Attempting the synthesis of 2,3-dibutyl-1-methylene- and 2,3-dibutyl-1-diphenylmethylene-cyclopropenes. Zhur. ob. Khim. 34 no.6:1722-1726 Je '64. (MIRA 17:7)

1. Leningradskiy gosudarstvennyy universitet.

DANILOV, L.L.; PYANKOV, I.A.

Reaction of carbethoxycarbene and dichlorocarbene with 1-hexen-4-yne. Zhur. ob. khim. 34 no.9:3129-3130 S '64. (MIRA 17:11)

1. Leningradskiy gosudarstvennyy universitet.

D'YAKONOV, I.A.; KOSTIKOV, R.R.

New data on the synthesis of esters of stereoisomeric 1,2-dipropylcyclopropane-3-carboxylic acids. Zhur. ob. khim. 34 no.11:3843-3844 N '64 (MIRA 18:1)

1. Leningradskiy gosudarstvennyy universitet.

KOSTIKOV, R.R.; D'YAKONOV, I.A.

Phenylbenzylcyclopropenone. Zhur. ob. khim. 34 no.11:3845-3846 N '64 (MIRA 18:1)

1. Leningradskiy gosudarstvennyy universitet.

KOMENDANTOV, M.I.; D'YAKONOV, I.A.; GUKHMANOVA, I.; KOSTIKOV, R.R.

Reaction of aliphatic diazo compounds with unsaturated compounds. Part 24: Reaction of diazoacetic ester with 5-decyne and 4-octyne. Nature and amount of a catalyst as influencing the course of the reaction. Zhur.org.khim. 1 no.2:209-219 F '65.

(MIRA 18:4)

1. Leningradskiy gosudarstvennyy universitet.

D'YAKONOV, I.A.; GOLODNIKOV, G.V.; REPINSKAYA, I.B.

Reactions of aliphatic diazo compounds with unsaturated compounds. Part 25: Reaction of diphenyldiazomethane with silicon olefins. Zhur.org.khim. 1 no.2:220-225 F '65.

(MIRA 18:4)

1. Leningradskiy gosudarstvennyy universitet.

D'YAKONOV, I.A.; REPINSKAYA, I.B.; GOLODNIKOV, G.V.

Trimethylsilylcarbene, a new methylene radical. Zhur. ob. khim. 35 no.1:199 Ja '65. (MIRA 18:2)

1. Leningradskiy gosudarstvennyy universitet.

DANILKINA, I.P.; D'YAKONOV, I.A.; KOSLOVTSEVA, G.I.

Reactions of carbenes with diene, enyne and diyne systems. Part 2: Reaction of dichlorocarbene with 3-methyl-3-penten-1-yne. Zhur.org.khim. 1 no.3:465-470 Mr '65.

(MIRA 18:4)

1. Leningradskiy gosudarstvennyy universitet imeni A.A.Zhdanova.

LISHANSKIY, I.S.; ZAK, A.G.; D'YAKONOV, I.A.; ALIYEVA, T.G.

Synthesis of ethyl ester of 2-vinylcyclopropanecarboxylic acid. Zhur. org. khim. 1 no.7:1189-1193 Jl '65.

(MIRA 18:11)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR i Leningradskiy gosudarstvennyy universitet.

D'YAKONOV, I.A.; VITENBERG, A.G.; KOMENDANTOV, M.I.

Kinetics of catalytic decomposition of ethyl diazo acetate. Part 1: Induction period. Zhur. org. khim. 1 no.7:1183-1188 Jl '65. (MIRA 18:11)

1. Leningradskiy gosudarstvennyy universitet.

D'YAKONOV, I.A.; GOLODNIKOV, G.V.; REPINSKAYA, I.B.

Reactions of aliphatic diazo compounds with unsaturated compounds. Part 25: Reaction of ethyl ester of diazoacetic acid with trimethylvinyl- , trimethylallyl-, and trimethyl-γ-butenylsilanes. Zhur.ob.khim. 35 no.12:2181-2189 D '65.

(MIRA 19:1)

1. Leningradskiy gosudarstvennyy universitet. Submitted November 6, 1964.

SOV/115-60-1-17/28

AUTHOR: D'yakonov, I. I.

TITLE: Some Problems of Measuring Temperature in Rotating Objects

PERIODICAL: Izmeritel'naya tekhnika, 1960, Nr 1, pp 36-40 (USSR)

ABSTRACT: The article contains detailed information on a new method for measuring the temperature of rotating parts in high-speed gas turbines and permitting evaluation of thermal stresses. One variation of the method for use in the laboratory and on stationary machines entails non-distorting current collection in the rotating electric thermoconverters /Ref. 1/. The sensitive elements used for measurement are thermocouples. The special slip ring and the connection of the thermocouples is described and illustrated (Figures 1 and 2). The air-cooled slip ring, consisting of a flange with a shaft bearing insulated sil-

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Some Problems of Measuring Temperature in Rotating Objects

ver rings, rotates at same velocity as the turbine part under investigation. The brushes are made of silver, copper and graphite powder (70, 21 and 9% respectively). The slip ring withstood 20-25 hours of measurement. One slip ring was especially "prepared" for measurement of its temperature in real gas turbines (Figure 2). The electric circuit (Figure 3) permitted simultaneous recording of the t.e.m.f. of several rotating thermocouples by means of an oscillograph. It was concluded that the best recording instruments for such measurements are potentiometers, whose readings are independent from the changing resistance of thermocouples and electric wires. A special experimental slip ring (Figure 4) was constructed for the determination of errors caused by temperature difference in the free ends of rotating thermocouples. An oscillogram

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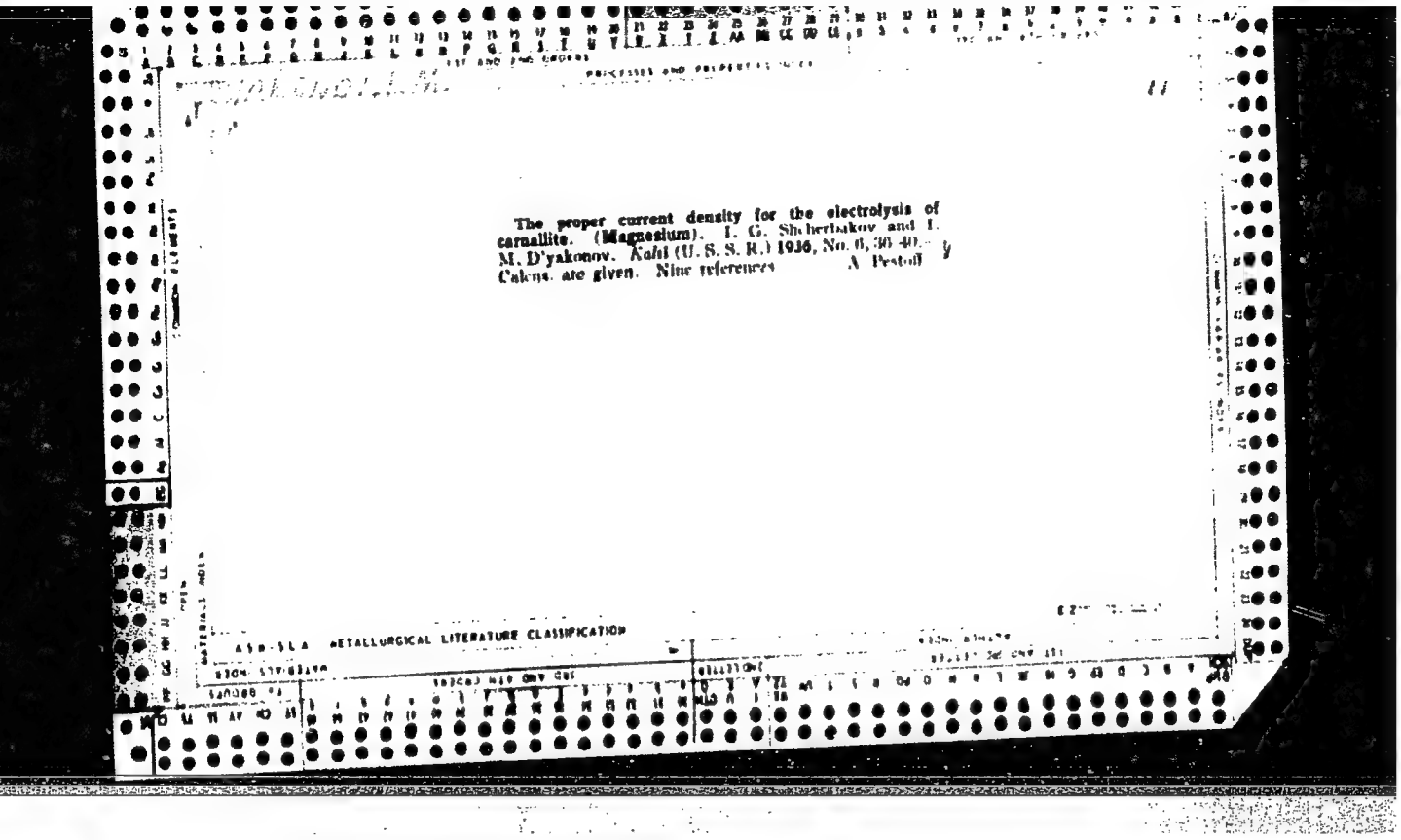
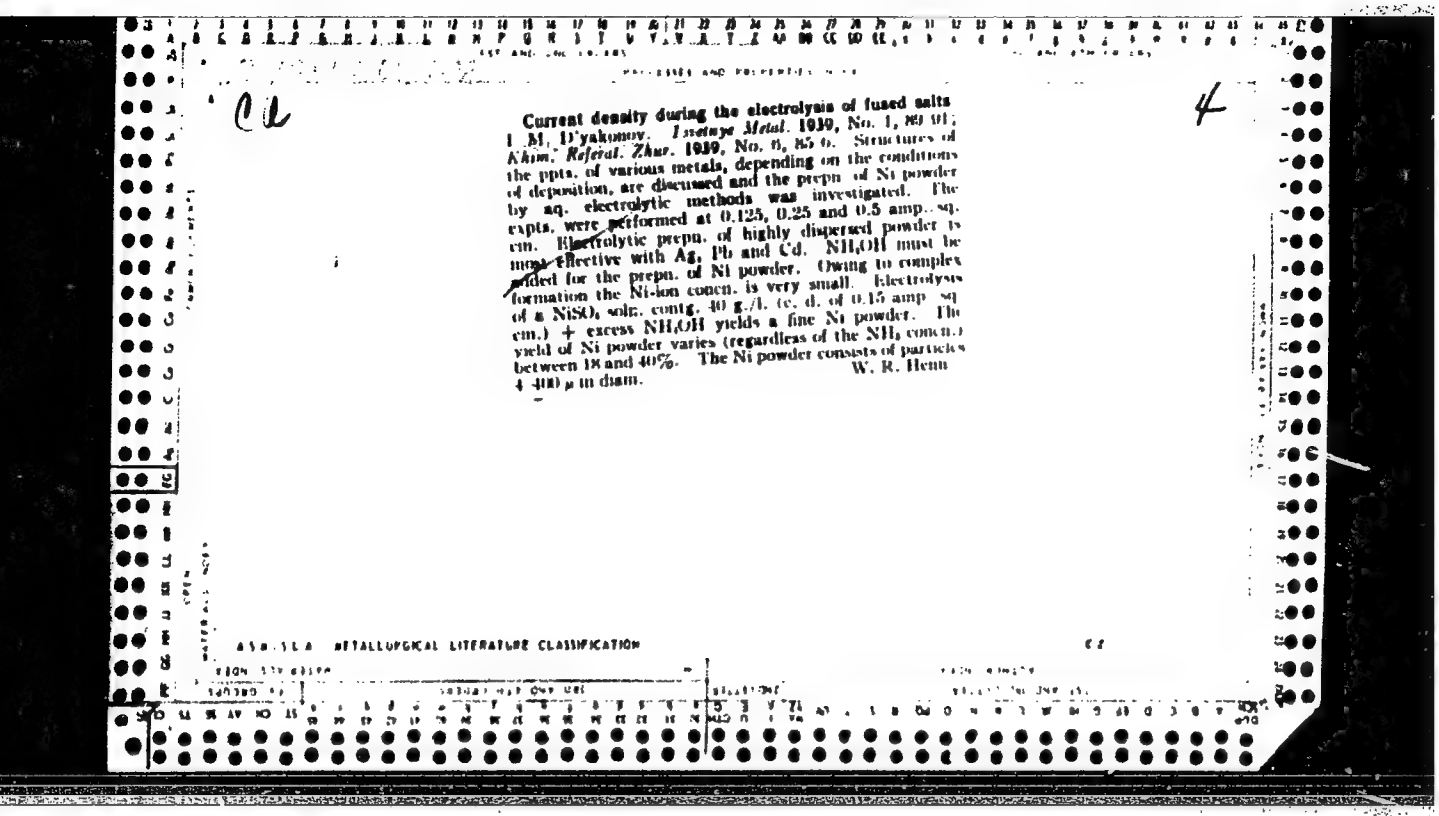
Some Problems of Measuring Temperature in Rotating Objects

is included showing the changes of temperature at 3 points on a gas turbine blade during start and heating up. The circuit includes an MVL-4 bridge. K.K. Kosterev, V. V. Dolinskiy and N. G. Bodrov took part in design and development. There are 1 set of diagrams, 3 diagrams, 1 graph, 1 table and 1 Soviet reference.



The proper current density for the electrolysis of carnallite. (Magnesium). I. G. Shcherbakov and I. M. D'yakonov. *Kolit* (U. S. S. R.) 1936, No. 6, 30-40. Calcns. are given. Nine references A. Pestoff



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4

Current density during the electrolysis of fused salts. I. M. D'yakonov. *Tsvetnye Metal.* **1939**, No. 1, 89-91; *Khim. Referat. Zhur.* **1939**, No. 6, 85-6. Structures of the ppts. of various metals, depending on the conditions of deposition, are discussed and the prepn. of Ni powder by aq. electrolytic methods was investigated. The expts. were performed at 0.125, 0.25 and 0.5 amp./sq. cm. Electrolytic prepn. of highly dispersed powder is most effective with Ag, Pb and Cd. NH_4OH must be added for the prepn. of Ni powder. Owing to complex formation the Ni-ion concn. is very small. Electrolysis of a $NiSO_4$ soln. contg. 40 g./l. (c. d. of 0.15 amp./sq. cm.) + excess NH_4OH yields a fine Ni powder. The yield of Ni powder varies (regardless of the NH_3 concn.) between 18 and 40%. The Ni powder consists of particles 4-400 μ in diam.

W. R. Henn

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

C2

AUTHOR: Pigulevskaya, N. V., Corresponding Member AS USSR 30-12-14/45

TITLE: The International Convention of Orientalists (Mezhdunarodnyy kongress vostokovedov).

PERIODICAL: Vestnik AN SSSR, 1957, Vol. 27, Nr 12, pp. 66-68 (USSR)

ABSTRACT: The regular 24th Congress of orientalists took place at Munich from August 28 to September 4th. It was attended by 1200 persons. At the head of the Soviet delegation consisting of 20 persons was the director of the Institute for Orientalism of the AN USSR B. G. Gafurov. Unfortunately many important oriental states were not represented, such as the Chinese Peoples' Republic, the Democratic Republic of Vietnam, India, and Burma. The main work of the Congress was carried out in 14 sections. The Soviet delegates delivered their lectures in nearly all sections. The lecture by V. I. Avdiyev on the cultural connections between Egypt and the neighboring states during the 2nd and 1st centuries before the new era was delivered in the section for Egyptology. In the sessions dealing with cuneiform characters contributions were made by B. B. Piotrovskiy ("Achievements in the Field of the Investigation of Urartu Civilization"), G. A. Melikishvili ("The Study of Urartu Epigraphy") and I. M. D'yakonov ("A Comparative Grammatical

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Survey of the Churritic and Urartu languages"). In the section for Islamic Science V. I. Belyayev spoke about the unique manuscript of the Arab historian As-Suli and on the reasons for the sectarian movements in Islam during the 7th century. A. K. Ali-Zade lectured on the Agrarian system in Azerbaijan in the 8th and 9th centuries. In the section for Turkish Science A. S. Tveritinova told about the unique manuscript of the Turkish historian Hodzha Hussein "Bedai-ul-Wekai". In the section for Iran, the Caucasus, and the neighboring countries A. G. Mirzoyev spoke about the "Author of the "Shah-in-Shah-Name" and B. G. Gafurov lectured on the "Founding of the State of the Samanides". In the section for the study of central Asiatic problems I. S. Braginskiy spoke about "The Study of the Activities of Kamol Khudzhandi (in connection with the preparation of the critical text of his divan)", and A. M. Belenitskiy about "The Art of Ancient Sogda (7th and 8th centuries) in connection with the excavations recently made at Pyandzhikent. In the section for Eastern Asia the lecture delivered by P.P. Topekha on the "Economic conditions for the Meiji Revolution" gave rise to a lively discussion. In the section for South East Asia A. A. Gruber spoke about "The Problem of the Peculiar Character of Class Formation in Indonesia

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up to 1945". In the section for African research D. A. Ol'derogge spoke about "The Nature and the Importance of the Rising under Osman Fodiy for the History of the "Hausa" (khausa). Numerous important information and lectures were contributed by the representatives of Western contries. The lectures of Soviet research workers on the problems solved by Soviet scientists met with general interest. Particular interest was created among the participants by what was said about the study of Eastern manuscripts in the USSR and the excavations of Soviet archeologists. Great importance must be attached to the meetings between the scientists outside the sessions. There was good understanding in the discussions with the scientists of Arab states. Between Soviet and British orientalists friendly relations had existed already since the 23rd convention. The same friendly relationship was established with French, Belgian, Iranian, and Afghan delegates as well as with the delegates from Ceylon and with some delegates from the U.S.A. On the last day of the Convention in Munich a reception of the German delegates took place. A distinct sign for the acknowledgment of the merits of Soviet orientalists was the unanimous decision of the consultative and general assemblies to convene the next convention of orientalists in Leningrad.

The International Convention of Orientalists. 30-12-14/45

AVAILABLE: Library of Congress

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4. History—Turkey

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D'YAKONOV, K. (Belokalitvenskiy rayon, Rostovskoy oblasti)

Respected in the whole village. Obshchestv. pit. no.9:13 S '61. (MIRA 14:11)
(Restaurants, lunchrooms, etc.)

D'YAKONOV, K.F., inzhener.

Debarking bolts in match factories. Der.i lesokhim.prom 3 no.6:17-18 Je '54. (MLRA 7:7)

1. Kaunasskiy derevoperera batyvayushchiy tekhnikum.
(Bark peeling)

BYVSHIKH, Mikhail Dmitriyevich; D'YAKONOV, Kuz'ma Filarentovich; DONNIKOVA, A.A., red.izd-va; SHIBKOVA, R.Ye., tekhn.red.

[Reference book for the foreman of a lumber kiln]Posobie masteru lesosushil'nogo tsekha. Moskva, Goslesbumizdat, 1962. 121 p. (MIRA 16:3)
(Lumber--Drying)

BYVSHIKH, Mikhail Dmitriyevich; D'YAKONOV, Kuz'ma Filaretovich; POTEKHIN, L.P., red.; MELEKHOVA, L.S., tekhn. red.

[Controlling, measuring, and regulating apparatus for chamber wood drying] Kontrol'no-izmeritel'nye i reguliruiushchie pribory kamernoi sushki drevesiny. Arkhangel'sk, Arkhangel'skoe knizhnoe izd-vo, 1962. 89 p. (MIRA 16:7)

1. Laboratoriya sushki TSentral'nogo nauchno-issledovatel'skogo instituta mekhanicheskoy obrabotki drevesiny (for Byvshikh, D'yakonov).

(Lumber--Drying)

BYVSHIKH, M.D.; D'YAKONOV, K.F.; NETREBENKO, L.A., red.

[Control, measuring, and regulating equipment for the kiln drying of lumber] Kontrol'no-izmeritel'nye i reguliruiushchie pribory dlia kamernoi sushki drevesiny. Moskva, TSentr. nauchno-issl. in-t informatsii i tekhniko-ekon. issledovanii po lesnoi, tselliulozno-bumazhnoi, derevoobrabatyvaiushchei promyshl., i lesnomu khoz., 1963. 67 p. (MIRA 17:10)

D'YAKONOV, K.F.

Effect of the temperature conditions of drying on the strength of pine wood. Der. prom. 14 no.1:12-14 Ja '65.

(MIRA 18:4)

1. TSentral'nyy nauchno-issledovatel'skiy institut mekhanicheskoy obrabotki drevesiny.